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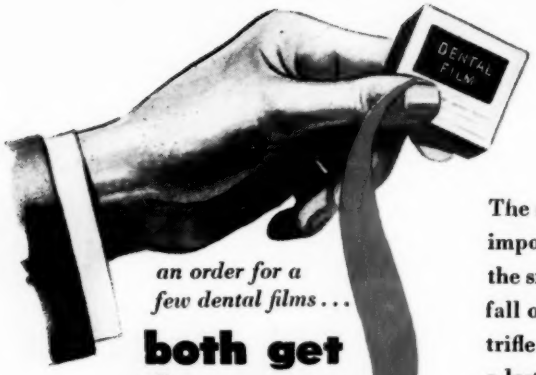

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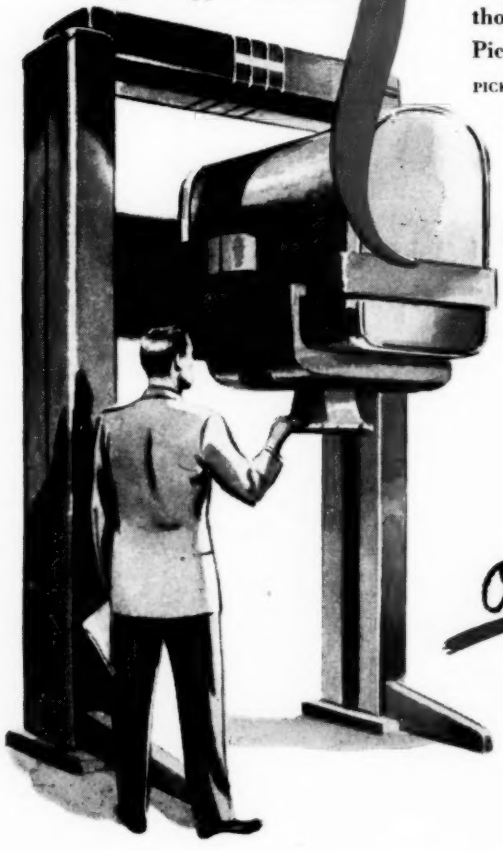

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Official Monthly Publication of the American Medical Women's Association, Inc.

VOLUME 3 NOVEMBER, 1948 NUMBER 11

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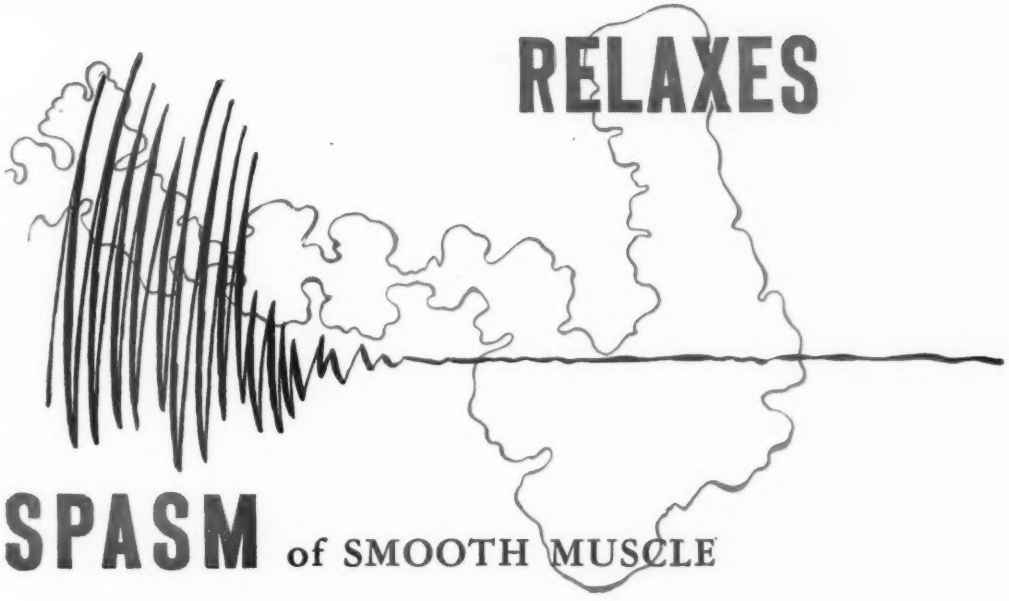

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(*Continued on Page xii*)

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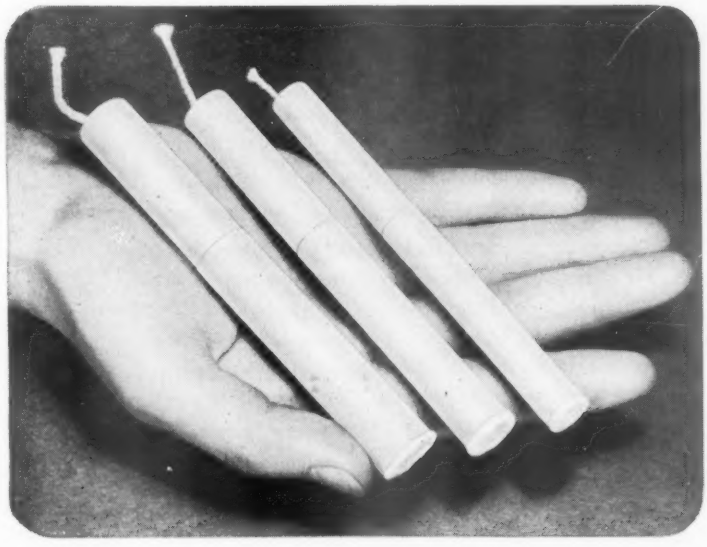

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Journal of the
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VOLUME 3 NOVEMBER, 1948 NUMBER 11

Poliomyelitis: A Symposium

FIRST INTERNATIONAL POLIOMYELITIS CONFERENCE

MARGARET S. TENBRINCK, M.D.

Sponsored by the National Foundation for Infantile Paralysis, which is marking its tenth anniversary, the week-long First International Poliomyelitis Conference was assembled at the Waldorf-Astoria, New York, on July 12. Some of the world's most noted authorities from over sixty nations were invited through the Department of State, but only thirty-eight nations were represented. Delegates who did not understand English heard the simultaneous interpretations in French or Spanish via an IBM receiver of the type used at the meetings of the United Nations.

THE CONFERENCE was opened on July 12, when Dr. Hart E. Van Riper, General Chairman of the Conference and Medical Director of the National Foundation, welcomed the delegates. His Eminence Francis Cardinal Spellman delivered the invocation. Mr. Basil O'Connor, President, The National Foundation for Infantile Paralysis, and Dr. Morris Fishbein, Editor, *Journal of the American Medical Association*, Chicago, Illinois, spoke.

Scientific Sessions.

I. THE IMPORTANCE OF POLIOMYELITIS AS A WORLD PROBLEM

Dr. Oswaldo P. Campos, Clinical Orthopedic Surgeon, Hospital Jesus, Rio de Janeiro, Brazil, presided.

Dr. Albert B. Sabin, Professor of Research Pediatrics, College of Medicine and Children's Research Foundation, University of Cincinnati, Cincinnati, Ohio, gave the first paper, "*Epidemiological Patterns of Poliomyelitis in Different parts of the World.*" Although the virus of poliomyelitis is apparently present wherever human beings are, the paralytic consequences of infection are not the same for all in different places at different times. There are as yet no simple tests for poliomyelitis infection, so the recognition of non-paralytic cases is uncertain and those reported are only a small fraction of the total number. Mortality statistics cannot be used to indicate the relative incidence of paralysis and there is no correlation between the number of cases reported per death and the proportion of non-paralytic cases included. Strains of high and low virulence may operate at the same time, as was demonstrated in the 1947 Cincinnati epidemic, those of low virulence being associated predominantly with cases of minor illness diagnosed as "summer grippe" or "sore throat." In addition to specific and non-specific host resistance variation in virulence of different strains may also play an important role in determining paralytic or non-paralytic consequences.

The vast majority of human beings at all ages have a capacity to check the multiplication of the virus sufficiently to prevent development of paralysis, which is apparently independent of previous exposure to infection. Earlier in the century exposure to infection was less in rural areas and higher in the first two decades, which was interpreted as due to the fact that the population had less opportunity to become immunized by sub-clinical infection. When cities began to show similar age selection patterns this was generally attributed to better living conditions and improvement in general hygiene. But greater contacts did not shift the rural age selection pattern. Also it was noted that in the greatly overcrowded and

Dr. Tenbrinck, who prepared this report, is clinical assistant visiting physician, Children's Medical Service, Third Division, Bellevue Hospital, New York.

unhygienic communities of the Orient paralytic poliomyelitis was still relatively rare. Recent wartime migrations of adult Americans and British to these areas have shown many examples of continued adult susceptibility demonstrating presence of the virus in abundance despite the rarity among the native children. Thus a low endemic paralytic rate might actually be associated with a high rate of unrecognized non-paralytic infection. In reexamining the age selection patterns it becomes evident that there has been a marked change in the age distribution. In the New York epidemics of 1916, 1931, and 1944 there was a gradual decrease in the first decade infections, with no change in the second decade. In 1916 2.0 per cent of the patients were over 15, in 1944, 14 per cent were over 15. In 1916, 79 per cent were under 5, in 1944, 25 per cent. Comparison of epidemics indicates that a pattern which appears in one part of the world may not appear in another until many years later. The Berlin and London epidemics of 1947 were similar to that of New York in 1944, although older individuals were attacked. In Berlin the lower susceptibility of the 1 to 3 year olds presents a challenge to the concept of latent immunization. Children of school age bear the greatest risk of contracting the clinically recognizable disease. The incidence in the school age was the only one that remained relatively constant throughout the Berlin epidemic despite no restrictions in school attendence. The influence of race on prognosis was discussed. It is the impression of physicians in China and Korea that paralytic poliomyelitis is rare and infantile in the native population. Yet the paralytic form occurred with unexpected frequency among American adults in those countries. There were also thousands of cases of fever of unknown origin or dengue-like fevers with pleocytosis which were most probably non-paralytic cases. The greater susceptibility of American and British adults in foreign countries has been explained on the basis of exposure to different types of the virus. When after forty years an epidemic hit Malta most of the cases were infantile, so it was assumed that it was not due to a foreign virus. Hawaii (1940) and San Francisco (1930) epidemics had inverse relationships of orientals and non-orientals. Evidently a certain way of life has more to do with the incidence than race as such. This was also demonstrated in comparing negro and white children in different sections of the United States. Comparing children on relief and those in families with incomes over $3,000 the age selection patterns were mirror images.

Adult sera from all over the world have antibodies for the Armstrong-Lansing type of virus. Antibodies appear earlier among Far Eastern children than in American cities. Poliomyelitis is becoming less infantile in many parts of the world. The age selection pattern seems to depend more on region or something in the way of life associated with it than on the chance invasion of an immuniological type that has been absent from a community. There is reasonable doubt that there has been an increase in the total amount of paralytic poliomyelitis in the last thirty years coincident with the change in age selection pattern. The over-all risk of contracting the disease in New York City has decreased.

Attention should be directed to those regions where the incidence of paralytic poliomyelitis has been consistently low for several decades and search be made for factors in the way of life, soil, water, diet, or environment which have nothing to do with the dissemination of the virus or acquisition of specific immunity. The issue is not the presence or absence of the disease in different population groups or regions, but rather consistently high or low incidence of paralysis and presence or absence of epidemics.

Professor Herbert J. Seddon, Professor of Orthopaedic Surgery, University of Oxford, England, spoke on *"Economic Aspects of the Management of Poliomyelitis."* Current methods of treatment should be placed on a more rational basis so that their benefits may be shared by more victims of this disease. Dr. Seddon reviewed the following considerations: (A) Control of outbreaks: obvious precautions are advised but no major preventive measures have ever been effective. (B) General staff: one that can be mobilized quickly and leave the rest of the doctors to do their regular work; temporary authority vested in a few is necessary. (C) Hospital organization: admission of patient to a fever hospital and examination as early as possible by an orthopedic surgeon with transferral to orthopedic hospital when indicated. (D) Treatment: the Kenny treatment is expensive; Ransohoff (1944) called it five times as costly as the so-called orthodox treatment. The question was raised as to how justified this is: (1) Splints are used for resting a painful limb. Denervated muscle is not in a peculiarly delicate state: it does not degenerate, it atrophies; but like innervated muscle it deteriorates if overstretched. (2) Axonal regeneration can be determined in four to six weeks in superficial muscles rested electrically. (3) The natural progress of recovery can be shown by increase in muscle tone for two years

or longer; Ransohoff is now getting patients out of bed in days or weeks (with which Professor Seddon is inclined to disagree). (4) Design of supportive apparatus, which is sometimes necessary, may be of wide variation. (E) Care of the patient after leaving the hospital: the most careful and prolonged supervision is called for; clinics for out-patients and After-Care Sisters are provided; the Government is now under obligation to find suitable work for disabled persons.

The panel discussion which followed was led by Dr. Thomas Francis, Jr., Henry Sewall University Professor of Epidemiology, School of Public Health, University of Michigan, Ann Arbor, Michigan.

Dr. Campos told that in Brazil poliomyelitis was thought not to exist, but actually after receiving replies from a questionnaire he sent out and experience at orthopedic hospitals it would seem to be the most crippling disease. There are no definite statistics, but it would seem to be gaining in importance and occurring both endemically and in epidemics. The disease has occurred in babies of a few days owing to unsterile rice water feedings immediately after birth.

Dr. Solomon Van Creveld, Professor of Pediatrics, University of Amsterdam, Amsterdam, Netherlands, told of the increase in incidence, especially in the years of 1943 and 1944 during the occupation. In the Dutch East Indies there have been occurrences. In Aruba (Dutch West Indies) there were 14 cases in 1941.

Dr. Hernan Romero, Professor of Hygiene and Preventive Medicine, University of Chile, spoke of the seasonal prevalence, the highest rates occurring in the warm months of December and January. There is a low fatality rate.

Dr. Hugo Muench, Professor of Biostatistics, School of Public Health, Harvard University, Boston, posed the questions of: (1) Epidemiology, or life history of the virus (could this be learned from reporting?). (2) Medical-epidemiological, or what is the determining fact of why some become ill; (3) Medical question, the case and care load: statistical evidence is necessary here.

Dr. James R. Enright, Chief, Bureau of Epidemiology, Board of Health, Territory of Hawaii, Honolulu, told of the former rate and later increase, although there has been a relative drop in the school years. Caucasians have the highest rate and Hawaiians the lowest. This is in direct opposition (or negative correlation) to the tuberculosis rate. He is interested in the outcome of BCG vaccination on poliomyelitis incidence.

Dr. James H. S. Gear, South African Institute for Medical Research, Johannesburg, South Africa, told of the post-war epidemics of 1918 and 1944-45 as well as the serious one of this summer. The Europeans have been more liable to paralysis than the Africans who have an almost 100 percent immunity, indicating widespread distribution. One-third of the population may be infected without clinical evidence. The virus is recoverable in the sewage after the epidemic and cases are removed (indicating subclinical, unrecognized cases).

Dr. Alton Goldbloom, Department of Pediatrics, Children's Memorial Hospital, McGill University, Montreal, Canada, postulated a possibly unrecognized related disease agent (i.e., in symbiosis) which may pave the way for poliomyelitis. He also postulated a hypothetical substance, antigen X, which may be antigenic, non-pathogenic, and non-neurotropic similar to cowpox vaccination for smallpox. This type of prophylactic vaccination is the only known treatment for viruses at present. He hoped for a chemotherapeutic agent for the viruses as well as the known ones for bacteria.

Dr. Sabin added that the danger to an unrecognized non-paralytic case becoming paralytic arose if the patient were not taken care of and allowed up and out too soon.

* * *

After the Scientific Session there was a press conference requested by Miss Kenny to question Professor Seddon on his remarks on the cost of Kenny vs. "orthodox" treatment. Dr. Ransohoff, New Jersey, was also present. Miss Kenny claimed that as Dr. Ransohoff never had had any Kenny technicians he was unable to compare costs. In quoting costs Dr. Ransohoff quoted EMIC statistics as cost per diem in a hospital for poliomyelitis cases (1945, $9.85; 1946, $11.39; and 1947, $17.73). Miss Kenny had checked by telephone with her institute in Minneapolis and said that the overall treatment cost today is $9.12, having risen from $5.00 a day two years ago. Professor Seddon stated that in England a physiotherapist gets three times the salary of ordinary nursing care. Dr. Fishbein added that in general hospital care had more than doubled. In New Jersey the cost in hospital wards had risen from $5 to over $11. He also added that statistics were not comparable in different institutions and organizations. Although Professor Seddon and Dr. Ransohoff graciously agreed to Miss Kenny's contribution to the concept of muscle spasm and Professor Seddon expressed his as yet unsubstantiated belief that moist heat was more efficacious than dry heat, he was unwilling to endorse the Kenny methods or advise these as practical.

II. Poliomyelitis: Pathogenesis of the Early Stage

The first paper was presented by Dr. Irvine McQuarrie, Professor and Head of Department of Pediatrics, The Medical School, University of Minnesota, Minneapolis, Minnesota, on *"The Evolution of Signs and Symptoms of Poliomyelitis."* Since there is no simple laboratory or clinical test available the diagnosis of poliomyelitis depends on the prompt recognition by the physician in order to institute early isolation of the patient and more effective therapeutic management. Dr. McQuarrie's figures are from the 1946 Minnesota outbreak. Although there are distinct stages in the full blown disease with symptomatology of certain variations there may be also the abortive form which is usually only suspected in an epidemic and corresponds to the first stage or prodromal period. The first, prodromal, stage is similar to any nonspecific, acute febrile illness and lasts about four days. There is moderate fever for about two days and the patients complain of malaise, headache, as well as pharyngitis, vomiting, nausea, abdominal pain, coryza, constipation, or diarrhea.

The second, preparalytic, stage is regarded as the time of invasion of the nervous system and lasts usually from three to six days. At this time the symptoms more or less diagnostic of poliomyelitis first become evident, headache, anorexia, irritability, apprehension, flushed skin, and nausea. The temperature is prone to rise higher and remain so for several days. By the second day irritability and hyperesthesia become more noticeable. Stiffness of the back and cervical region causes retraction of the head and aching of the back. The deep reflexes tend to be slightly hyperactive. Spinal fluid now shows increased pressure, pleocytosis, and increased protein. Vomiting seldom occurs after the second day but constipation is frequent.

The third, paralytic, stage occurs on the third or fourth day when paralysis appears following an involuntary tremor of the muscles involved. The first sign is a diminution or loss in deep reflexes. With relief of muscle soreness and spasm the extent of true paralysis becomes apparent. Paresis of the urinary bladder, if present, lasts but a few days. The disease at this time may assume one of several forms.

In the paralytic spinal form there is paralysis in the extremities, trunk, neck, diaphragm, or intercostals. In involvement of the latter two the patient becomes restless and apprehensive. Respiration is shallow and rapid, the alae nasae are dilated and speech is subdued. The patient is fatigued, irritable, and distressed with flushed face and cyanosed lips. The respirator or oxygen administration is indicated.

In the bulbar type the cranial nerves as well as respiratory, cardiac, and vasomotor centers are involved. In the Minneapolis epidemic 23 percent had bulbar signs and of these one-fourth died, so it is this type which accounts directly or indirectly for most of the deaths. Great vigilance, therefore, with prompt care is necessary at the onset and during the course which is stormier and shorter. A shock-like stage may ensue. The most common initial complaints indicated cranial nerve nuclei involvement with saliva in the pharynx, difficulty in swallowing, and hoarseness or nasal twang to the voice. The treatment indicated may include aspiration of mucus, oxygen therapy, tracheotomy, or artificial respiration.

Polioencephalitis indicates involvement of the higher brain centers and occurred in one-sixth of the Minnesota group. The symptoms included hyperexcitability, restlessness, irritability, confusion, irrationality, personality disturbances, insomnia, or somnolence. The adults mostly experienced anxiety and premonitions of impending death. Without bulbar involvement the prognosis is good. Combinations, such as bulbospinal or bulboencephalitic involvement, may also be present.

The prognosis for life is good for those who survive the acute stages. In these bulbar cases, contrary to former assumption, the residual cranial nerve impairment is from 18 to 77 percent, depending on the nerve affected. It appears, therefore, that the cranial nerve palsies have no better prognosis for complete recovery than those occurring in the spinal segments of the cord.

Dr. David Bodian, Associate Professor of Epidemiology, School of Hygiene and Public Health, the Johns Hopkins University, Baltimore, Maryland, spoke on *"Poliomyelitis: Pathological Anatomy."* A brief resume of the historical background recalls that in 1870 Charcot first stated his theory that the symptoms of poliomyelitis were due to injury of the anterior horn cells of the spinal cord gray matter. In 1888 Rissler of Sweden showed that the primary process was in these nerve cells which controlled motor activities and that the inflammatory changes were secondary. In 1907 Harbitz and Scheel of Norway demonstrated brain lesions as well as those of the cord. In 1908 Landsteiner accomplished transmission to monkeys which allowed pathologists to study the changes at various stages and correlate their findings with clinical manifestations.

Virus activity cannot be detected in the central nervous system until microscopic lesions are present. The onset of virus multiplication and cellular reaction precedes the onset of paralysis by at least one day and often several. The neurons are involved in the earliest visible stage and may be independent of inflammatory changes. The dissolution of the cytoplasmic Nissl substance is the earliest visible change. When irreversible changes have occurred the necrotic cell may be removed by neuronophagia or may undergo lysis. These changes are accompanied by an increase in inflammatory cells.

The origin of the neurological symptoms of the acute stage depends on the variation of intensity of the pathological changes. The variability of the neurological symptoms is due to the variation in severity of injury to the nerve centers rather than to variation in the localization of lesions. This indicates a variability of the host and is sometimes due to differences in the strain of virus. There are also differences among host species and partial host immunity due to previous contact. Although lesions appear in certain functional centers symptoms need not result. Injury must reach a certain threshold of severity and severe lesions are usually necessary to produce dysfunction at the clinical level. This indicates a large margin of safety and is a well known feature of cardiovascular system function.

The role of the inflammatory reaction shows that the severity may be quite variable in different individuals and susceptible centers. There is no evidence that edema plays a role in producing paralysis although an inflammatory response severe enough to produce massive exudate usually occurs after most of the anterior horn cells are already destroyed. Then there is no possibility of recovery from paralysis. But severe paralysis may occur without edema, demonstrating the variability. The sequence of events depends on the initial lesion. If a large proportion of lower motor neurons is injured early the flaccid paralysis will mask any symptoms of later upper motor neuron involvement; or if the brain stem is involved first, spasticity, etc., will be first observed. The distribution of the lesions is in certain susceptible regions and every case exhibits brain lesions although the cortex (except the motor area) is usually spared. The brain stem bears the brunt. In the cord the anterior columns are most affected although the intermediate and posterior horns may be also.

The role of the cerebral cortex is probably not to produce the so-called "encephalitic" symptoms, these symptoms resulting rather from a heavier inflammatory reaction in the brain stem.

The role of the brain stem centers demonstrates the partial paralyses from irregular destruction. Some fatal cases which had had no bulbar signs showed considerable brain center involvement similar to that of mild paralytic or non-paralytic experimental cases. There is thus a margin of safety of vestibular centers.

The relation of spinal lesions to paralysis depends on the severity of involvement. The function of the infected motor nerve cells only disappears in the stage of severe chromatolysis. In limbs showing complete paralysis only about 10 percent of the motor neurons, or less, have survived. Motor nerve fibers begin to degenerate about three days after destruction of the nerve cell body, i.e., Wallerian degeneration.

Factors in the recovery of motor function include: (1) The cerebral cortex is so little affected that there is every reason to suppose that the patient can rapidly begin to relearn patterns of motor activity, or motor re-education; (2) although most of the brain stem centers concerned with motor function are damaged in varying degree there may be some recovery of neurons and re-routing of neuron-chain discharge pathways, the latter involving the learning process; (3) reversible changes may occur in spinal motor neurons in the active stage; (4) the slow increase in power is probably the result of slower compensatory changes in the neuromuscular mechanism, as muscle hypertrophy, etc.

Dr. Fritz Buchthal, Director, Institute of Neurophysiology, University of Copenhagen, Denmark, presented "*Some Aspects of the Pathological Physiology of Poliomyelitis.*" These must take into account the histological lesions which occur in the different stages of the disease and the large distribution of lesions throughout the cord and brain affecting the nerve cells only. It is assumed that the virus must attain a certain minimum concentration before it causes degeneration or recovery, interpreted as a substitution of primary internuncial pathways by secondary "delay paths."

The distribution of muscle involvement is noted in the involvement of the lower limb, which is attacked twice as often as the upper, and of the proximal muscles, more often attacked than the distal. Recovery depends on severity and on the muscle affected and may continue for at least six months. There seems to be a greater affinity of the virus for the large caliber nerve fibers. Prognosis is considered to be best in the flexor muscles of the upper extremity and a possible explanation is the difference in the vascularization of the different parts of the anterior horn.

Paresis of the urinary bladder and various parts of the gastro-intestinal tract are reversible affections. These parts have intramedullary representation and the high rate of recovery may be due either to a temporary lesion of these cells or to an independent autonomic activity regulated from peripheral ganglia.

Stiffness of the back and neck are considered to be signs of a meningeal reaction and appear early. These signs are not as marked as in the bacterial meningitides and may be due to impairment of central inhibitory mechanisms by early lesions in subcortical centers. Spasticity of limb muscles has been rather over-estimated. Recent electromyographic observations showed that "spastic" activity which is nearly always found in the muscles of the neck and spine hardly ever occurs in the muscles of the limbs provided passive movements do not exceed the threshold at which they produce pain. Muscle pain is felt especially when the muscle is contracted and is probably of purely peripheral origin, although its origin is still obscure.

Electromyographic examination has proved useful in the assessment of paresis and stage of denervation. It makes it possible to determine whether or not the paralysis is complete and it provides a delicate means of assessing the condition of the motor nerve and corresponding nerve cells. An expression of the number of active nerve cells can be obtained, as well as detecting minor degrees of lower motor neuron damage. Regeneration during convalescence can be detected. A partially denervated muscle exhibits fibrillation and, on the electromyograph, electric action potentials of extremely short duration (1 to 2 milli-seconds). When the potentials become of normal duration (5 to 10 milli-seconds) the change can be considered as an early sign of recovery.

Simultaneous discharges to both agonist and antagonist is the most important disturbance of normal reciprocal innervation. It can be overcome by re-education.

There is also a peripheral element in the motor impairment. Fatigue results in a reduction of the action potentials. Denervated muscle has an increased sensitivity to intra-arterially applied acetylcholine. But in poliomyelitis neither the motor nor vasomotor response corresponds with that seen in denervation from other causes. Lowering of the threshold is less marked. The abnormalities in the electrical response indicate that peripheral structures are involved. Whether this is due to the direct action of the virus on the myoneural junction or to a secondary reaction following degenerative processes remains open. A secondary involvement appears more probable.

Autonomic disturbances have not been studied very well as yet. In the later stages of the disease and in slight cases without clinical bulbar involvement no abnormal response in skin temperature could be recorded. The sympathetic system is less often affected than the parasympathetic.

The panel discussion was led by Dr. Waldo E. Nelson, Professor of Pediatrics, School of Medicine, Temple University, Philadelphia, Pennsylvania.

Dr. W. Ritchie Russell, Radcliffe Infirmary, Oxford, England, described the first pre-paralytic symptoms obtained in adults in the English epidemic. These were headache, pain, and increasing soreness in specific muscles as well as fatigue and gastro-intestinal upsets. Pain was not always present.

From the floor it is was asked if there were any relationship between the degree of pain and length of time for recovery. Dr. McQuarrie answered that there seemed to be no possible correlation except in patients doomed to bulbar complications. These bulbar cases seemed to indicate that intensity of pain and other early symptoms may be an index to the length of recovery.

Dr. Sabin queried if sore throat is neurogenic in origin. Dr. Bodian felt it might be, based on animal pathological evidence, but knew of no evidence in man.

Dr. Robert Ward, Associate Professor of Pediatrics, New York University, New York, spoke on the subject of the portal of entry. In the animal this may be through the skin, although it is probably most rare in man. He felt the mouth in man was the major portal of entry and added that the virus can be found throughout the alimentary canal and leads from there via nerves to the central nervous system. He felt the nose and respiratory tract are a possible but dubious portal.

Dr. Russell also emphasized that physical activity after onset contributes to the severity of the disease, the amount of activity indulged in coinciding with the resulting paralysis.

A floor question raised the problem of swimming pools during an epidemic and all members of the panel agreed that pools should be shut in the face of an epidemic. The danger was not only to contracting the disease from the water but also in the activity and resultant fatigue.

The other panel members were Dr. Harold K. Faber, Professor of Pediatrics, School of Medicine, Stanford University, San Francisco, Cali-

fornia; Dr. Gordon M. Martin, Section on Physical Medicine, Mayo Clinic, Rochester, Minnesota, and Dr. Lewis J. Pollock, Professor of Nervous and Mental Diseases, the Medical School, Northwestern University, Chicago, Illinois.

III. The Management of Poliomyelitis: The Early Stage

Dr. Robert K. S. Lim, Surgeon General, National Defense Medical Center, Shanghai, China, presided.

Dr. John A. Anderson, Professor and Head, Department of Pediatrics, University of Utah, School of Medicine, Salt Lake City, Utah, gave a paper on *"Diagnosis and Treatment of Poliomyelitis in the Early Stage."* Although the disease is caused by a virus there is no simple, quick way of identifying it. The early diagnosis is a presumptive one. After the virus enters a susceptible individual there may be two sequences of events. In some there may be no reaction which rises to a clinically visible level, while in others the sequence progresses until reaching a clinically diagnostic zone. The time is not known exactly, but may be three to thirty-five days, usually about one week.

(A) Diagnosis of the early phases of poliomyelitis. The most common symptoms and signs are sore throat, nausea and vomiting, headache, fever, and drowsiness. The laboratory offers no aid. In correlating these symptoms with the season, history of contact or presence of the disease in the community should lead to the possible diagnosis. Almost 80 percent of patients exhibiting a mild infection are well within two to three days. The remaining 20 percent have central nervous system signs and become the medical problems. Symptoms frequently occur where there has been stress to the body. Other predisposing factors are pregnancy, exhaustion, and changes in temperature. Frequently the symptoms occur in succession without an interval. In those cases where there is an interval between the onset of illness and paralysis there is a probability that the paralysis might not have occurred if there had been no stress incident precipitating its development.

The onset of clinical evidence of central nervous system involvement usually begins with anorexia, fever, or headache. Soon stiffness and pain in the back, neck, and extremities occur. Irritability and fretfulness may give way to drowsiness. There may be stiffness or cramping of an extremity or "jumpiness" of the muscles. Stiffness of the back at this time is almost invariable, and stiffness of the neck is usually present. Limitation produced by the shortened muscle groups in spasm is a distinct and definite one. Some degree of bilateral asymmetry in the point at which the movement is limited is usually present, suggesting a neurophysiologic process. Tremors usually herald the site of a forthcoming paralysis. The pain may be spontaneous. Vasomotor disturbances of the skin may occur. Generalized asthenia seems to be present in nearly all cases. Drowsiness occurs in about one-fourth. Apprehension is usually present when the patient is aroused. Bulbar cases appear ill, toxic, and lethargic early in their course and the signs may develop rapidly. Inability to void may occur.

Slight to moderate leucocytosis is usually present. The sedimentation rate is usually normal. The spinal fluid may exhibit certain features: high cell count with predominantly mononuclear cells, returning to normal the second week; protein may become elevated the second and third weeks, or it may be entirely normal in 12 to 15 percent of the cases throughout the course, which may end with paralysis or even death. The differential diagnosis must consider the acute encephalitides of St. Louis, equine, mumps, and other viral infections, differentiation depending on the course and serological tests. Aseptic meningitis, benign lymphocytic choriomeningitis, and the Guillain-Barre syndrome present the most difficult problems in the early phase.

(B) Management of the early phase of poliomyelitis. The sequence of events outlined permits a working hypothesis of the disease, stating that (1) it is an acute viral infection in most susceptible subjects receiving adequate dosage; (2) clinical symptoms occur usually in one to three weeks; (3) the virus is excreted in the feces for variable periods and in throat secretions in the febrile period; (4) the virus may be present in the central nervous system without producing symptoms; (5) the majority show general systemic response with recovery in two to three days, although the virus may be excreted for a long time; (6) enhancement of subclinical activity in the central nervous system seems to be related to physiologic stress factors, "constitutional" factors perhaps being important; and (7) following exposure, the time required for the virus to produce severe damage and death may be very brief or there may be an interval between the general and the central nervous symptoms.

At the onset bed rest is the most important treatment, with avoidance of excessive activity, fatigue, chilling, and overheating for at least three weeks. If central nervous system involvement is

suspected it is advisable to admit the patient to a hospital and not to delay, in order to avoid dehydration and exhaustion. The bulbar cases especially need specific attention. Heat packs are not necessary early. Sedatives should be avoided. Penicillin may be given for respiratory difficulties resulting from aspiration. Sulfonamides, curare, prostigmine, and quinine have no place in the treatment. The advisability of streptomycin is not known. Intravenous glucose solutions are probably of more use because of the glucose contained than for their dehydrating effect. Convalescent serum is of no value. The physician's aid in outlining the course and in reassuring the family, as well as gaining their co-operation in the follow-up observation and care program, is not to be underestimated.

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The panel discussion was led by Dr. Henry R. Viets, Lecturer on Neurology, Harvard University, Boston.

Dr. Philip M. Stimson, Director, Poliomyelitis Division, Knickerbocker Hospital, New York, outlined the sequellae in 600 preparalytic cases admitted to Willard Parker Hospital, in New York. Of these 16 to 19 percent developed paralysis. For each poliomyelitis case with permanent paralysis it is estimated that one has only fever, three are recognized as acute poliomyelitis without paralysis, five to twenty-five have minor illnesses not recognized, and an unknown number are infected individuals who become temporary carriers. The reasons for this are found in the following factors: (1) dosage; (2) insults to the upper respiratory mucous membranes, tonsillectomy being a known risk. (At this point Dr. Stimson told of a family of six children, five of whom had tonsillectomies during a poliomyelitis epidemic. All five developed bulbar poliomyelitis, and of these three died. The sixth child and the parents had the virus in their stools but showed no clinical evidence of infection.) (3) exhaustion, fatigue, or the "stress" relationships; (4) pregnancy—in Sweden the expectancy is three times, in Denver two times the usual rate, and the disease is more serious in the last trimester; (5) constitutional factors, such as the protection of a thiamin deficiency and the increased security at puberty.

Dr. Irvin E. Hendryson, Assistant in Orthopedic Surgery, Medical Center, University of Colorado, Denver, questioned the relationship of dental caries in breaking down resistance and whether it were better to leave in situ a carious tooth.

Dr. Basil C. MacLean, Director, Strong Memorial Hospital, University of Rochester, Rochester, New York, advocated hospitalization early in a general hospital on a closed ward with mask, gown, and handwashing precautions.

Dr. Stimson remarked that the method of removal to the hospital should be horizontal and recumbent and not enhance the possible "stress" relationships.

Dr. Ernest L. Stebbins, Director, School of Hygiene and Public Health, The Johns Hopkins University, Baltimore, Maryland, spoke on the practical limits to the restriction of activities. In the presumptive case he recommended reassurance and rest as long as there was evidence of infection, followed by no restrictions. He felt the preparalytic should be hospitalized. The parents should be reassured. Early isolation should be advised at first, but elaborate disinfection later is unjustified.

In answer to a question from the floor as to the incidence of cross and staff infections, Dr. Hendryson cited cases in the 1914 Colorado epidemic of infants of five to seventeen days who developed poliomyelitis although they had never been further than their mothers' rooms. They had paralyses and were proven cases.

Dr. E. R. Mugrage, Professor of Clinical Pathology, University of Colorado, Medical Center, Denver, Colorado, added that there had been at that time no staff infections.

Dr. Jessie Wright, Medical Director, D. T. Watson School of Physical Therapy, Pittsburgh, Pennsylvania, opened the discussion of the usefulness of physical measures with a description of the "rocking bed." As the head of the bed rises the diaphragm is pulled down and as the head falls the diaphragm migrates upward aided by the visceral shift. Controls enable adequate nursing and physiotherapeutic care. There is less restriction and better circulation. Severe and exhausted cases must go into the respirator. Physiologic positions are also used to advantage, as well as moist heat, assisted movements, muscle reeducation, and judicious stretching after curare.

Dr. Henry Alsop Riley, Professor of Neurology, Columbia University, New York, spoke on the cause of the muscle spasm and the site of the irritation, citing evidence supporting the involvement of a meningitic and root pain. Curare has no effect on the pain, and movement of a limb beyond the range gives a root-type of pain from stretching of the nerves. The movement resistance is the result of factors beyond the confines of the affected muscles and probably indicates involvement of the dorsal root ganglia and confluent meninges. The positions assumed are for minimizing these stretches.

Dr. Mugrage described the 1946 Colorado epidemic and laboratory findings. Of 303 cases, 14 percent were non-paralytic; 7 percent were bulbar; 25 percent were bulbospinal, and 54 percent were spinal paralyses. The patients were from 10 months to 57 years of age, with the peak in the 5 to 9 year old group, males predominating; 42 percent were adolescents, with females predominating in the 15 to 35 year old group. The slight changes in urine and peripheral blood were inconstant and inconclusive. The spinal fluid showed increased cells at first, with increasing globulin in the next two weeks. The sugar was unchanged and colloidal gold changed from a Zone 2 to Zone 3 (meningitic) curve in several specimens. Seven percent had normal findings. To the differential diagnosis were added upper respiratory infection, gastro-intestinal diseases, stiffness from arthritis, infectious mononucleosis, acute multiple sclerosis, acute meningitis, and (wood) tick paralysis.

Dr. William McD. Hammon, Professor of Epidemiology, George Williams Hooper Foundation, and The School of Public Health, University of California, San Francisco, California, discussed the pathological diagnosis. In the fatal cases the pathologist can make the diagnosis. Isolation of the virus from throat or feces costs $100 to $200 per case. No serological test is available. Some of the other encephalitides may be identified by complement fixation and neutralization tests. Sera must be supplied serially, fresh and refrigerated, and will be frozen at the laboratory. Two weeks are required for diagnosis. The tests are performed in only a relatively few institutions and are costly in time and money.

Dr. James H. S. Gear asked if there were any evidence that spinal puncture might increase severity of the attack, changing a pre-paralytic to a paralytic case, for example. He suspected that it might. Dr. Hammon commented, "No evidence;" but Dr. Stimson suggested that there might be trauma in a fighting child, contributing to the "stress" factors. Dr. Wright said that in the over 1000 cases which she had seen there was no change after lumbar puncture.

Dr. Muench questioned the possibility of placental transmission. Dr. Hammon told of fetuses tested after abortion of a poliomyelitis-infected mother which showed no isolation of the virus.

Dr. Hendryson added to the differential diagnosis list: tuberculous meningitis, osteomyelitis of the pelvis, anxiety neurosis, and hysteria during epidemics, and in older people, low back strain with upper respiratory infections.

Dr. Edward B. Shaw, Associate Clinical Professor of Pediatrics, Medical Center, University of California, San Francisco, California, asked if there were a differentiation between the minimal neck stiffness and later low back stiffness (the reverse of meningitis). Dr. Anderson felt this was the result of the two processes, early and late.

From the floor there was a request for the criteria for placing a poliomyelitis patient in the respirator. Dr. Stimson gave the clinic criteria of hypoxia as (1) increase in pulse and respiratory rates noted on the chart; (2) restlessness, anxiety, and sleeplessness; (3) evident increase in respiratory effort; (4) disinclination to talk and talking in short breaths; (5) beginning evidence of cyanosis of lips, conjunctivae, and nail beds; (6) marked cyanosis; (7) twitchings around corners of lips and failure to answer questions; and (8) coma. Contraindications for placing a patient in the respirator are many and definite. The indications are twitchings, as well as sleeplessness with respiratory difficulty. After awakening, the patient may be removed from the respirator.

Dr. Evans, of England, questioned the advisability of all operations during epidemics, citing a case of fracture which was followed by poliomyelitis and paralysis in the same limb. The panel offered no answer to this.

IV. Poliomyelitis: The Convalescent Stage

Dr. Arthur Steindler, Professor and Head, Department of Orthopedic Surgery, University Hospitals, State University of Iowa, Iowa City, Iowa, presided.

Dr. E. T. Bell, Professor and Head, Department of Pathology, The Medical School, University of Minnesota, Minneapolis, Minnesota, spoke on "*The Pathology of Poliomyelitis.*" He gave the results of postmortem examinations on 245 fatal cases. In these 44 percent of the deaths occurred during the first week, and only 17 percent of the patients lived longer than two weeks. Those who survived as long as five months usually lived indefinitely. The extent of the paralysis is usually established within one week after the onset and does not spread to new areas. Although the virus is present in the central nervous system for a long time there is no evidence that it continues to damage nerve cells after the first week. Chronic poliomyelitis therefore is not comparable to tuberculosis or syphilis, in which the irritant acts for long periods of time. It is more like a chemical injury and the subsequent exudative inflammation apparently does not destroy any more neurons and

gradually disappears in several months. Chronic poliomyelitis is therefore the healing or healed stage of the acute disease. Dr. B. J. Clawson studied myositis and myocarditis in poliomyelitis and other diseases and concluded that the incidence is not related to the poliomyelitis virus.

Eight illustrative cases were reviewed in which the patients survived for two months to nineteen years. After three months the only evidence of active inflammation is a few lymphocytes which disappear after a few years. The only permanent damage is to the neurons in the anterior horns. In two cases there was evidence of lasting damage to the interstitial tissues of the gray substance and in one there was demyelinization and loss of axones in the white columns, especially the posterior columns.

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Dr. Arthur L. Watkins, Chief of Physical Medicine, Massachusetts General Hospital, Boston, Massachusetts, spoke on *"Disabilities in Poliomyelitis,"* with the intent of analysing the different types of neuromuscular dysfunction.

Muscular paralysis results from destruction of the corresponding motor cells in the spinal cord. At first gross testing is sufficient, because pain and sensitivity make accurate manual testing impossible. The bulk of motor loss occurs abruptly during the first week, although in a recent series from 10 to 20 percent showed evidence of renewed activity of the virus in the third and fourth weeks with new segments involved, and increased protein content of cerebral spinal fluid. It may be weeks before the inflammatory processes subside. The extent of neurological damage is reflected by loss of muscle control which is determined by manual muscle tests, and rated Zero—Trace—Poor—Fair—Good—Normal. There is a tendency in general for affected muscles to improve over a period of time. Muscles originally rated "Zero" showed little improvement in six months, but by one year 15 percent rated "Trace," 10 percent "Poor," and none "Good." Of those rated "Trace" at the beginning, 25 percent became "Fair" and under 10 percent "Good" at six months. The originally "Poor" muscles were somewhat better, although at six months only 20 percent were "Good" and none were "Normal." It is at the initial rating of "Fair plus" that the prognosis becomes much improved, with 80 percent becoming "Good" in six months. Only 50 percent of the initially "Good" muscles became "Normal" in six months, although nearly 90 percent rated that at one year. The original test of "Zero" or "Trace" denotes poor prognosis; whereas the prognosis for "Fair" is good.

The distribution of muscle weakness is of importance and where there is an imbalance the weaker may show progressive loss of power. As long as twenty years after the onset it is possible to increase muscle strength by progressive resistance exercises, whereas paralysis or weakness may progress unduly for years unless optimum physical therapy measures are employed.

Muscle shortening or "spasm" has been studied by use of the electromyograph. In the acute stage there is often an abnormal amount of electrical activity from muscles apparently at rest and the electrical hyperexcitability upon passive stretching is strikingly abnormal although completely paralyzed muscles show no electrical response. In the later stages the electrical record is different and the discrete high voltage with diphasic potentials is similar to that in partially innervated muscles during the stage of regeneration following peripheral nerve injury. With good recovery of strength this irritability disappears. From completely paralyzed muscles, on the other hand, the discharges are short and of low voltage with slow, irregular frequency and indicate probably irreversible changes. The fibrillary activity observed on the electromyogram of the completely paretic muscle is the same as that observed after peripheral nerve degeneration.

Heat and rest are helpful in relieving the symptoms in the acute stage, whereas more strenuous measures may be necessary later. Muscle contractures permitted to continue have a tendency to be progressive.

Electromyography has also revealed the co-contraction of agonist and antagonist, particularly in extremities with partially paralyzed muscles. This loss of normal reciprocal innervation may disappear with improvement of muscle strength and following muscle re-education. Disabilities in locomotion may be aggravated by developing improper habits of posture, gait, etc.

Circulatory disorders may lead to ulcers, as well as growth disturbances occurring in children with residual paralysis. In the convalescent patient with poliomyelitis we are not dealing with a static condition.

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Dr. Ralph K. Ghormley, Professor of Orthopedic Surgery, Mayo Clinic, Rochester, Minnesota, spoke on *"Progressive Deformities in Poliomyelitis."* His paper, prepared with Dr. Cameron S. Allen, Fellow in Orthopedic Surgery, Mayo Foundation, emphasized that the most important objective of treatment in any case is prevention of deformities. Paralysis may disappear completely,

but once established deformities may be difficult to correct or may be followed by secondary deformities and disabilities.

There are several factors leading to the development of deformities: (1) Fascial contractures result when a muscle has been at rest for a variable period and adhesions have formed between muscle and fascia, resulting in shortening and fibrosis of the underlying muscle. Early restoration of active motion to all muscles obviously is the most effective means of preventing the development of such contractures. (2) Deformities may be caused by muscle imbalance and, if neglected or unrecognized, will become progressive. Splinting is of value. (3) Deformities may also be caused by stretch paralysis and may become troublesome factors, especially in the third year. The treatment is by splinting, muscle training, and stretching of contracted muscles and fascia.

Certain important deformities were discussed. (1) Fixed pelvic obliquity may result from imbalance of the abductors and adductors of the thigh or an imbalance of the trunk muscles. (2) Scoliosis results from the deforming changes which mold the vertebrae into malformed structures at a late and irreversible stage. (3) Shortening of the limbs may result from disuse, contractures across epiphyseal lines retarding epiphyseal growth, or from lack of normal stimulation from muscle contraction or blood supply. (4) Shoulder contractures. (5) Calcaneus deformities of the feet, etc., must be watched for. Treatment includes splinting, the relief of tenderness, pain, and tension, and early muscle examination, as well as frequent checking for early contractures.

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The Panel Discussion was led by Dr. Edward L. Compere, Associate Professor of Bone and Joint Surgery, The Medical School, Northwestern University, Chicago, Illinois.

Professor Herbert Seddon described the results of studies on World War II casualties in aiding the concept of movement in reducing or preventing subsequent deformity. Those soldiers treated by splints and immobilization frequently showed bad deformity later. Those permitted some movement showed less deformity later, and those who undertook active exercise showed no deformity.

In answer to a question from the floor concerning the use of passive motion in a patient where nerve control is lost, Dr. Miland E. Knapp, Clinical Associate Professor of Physical Medicine, The Medical School, University of Minnesota, Minneapolis, Minnesota, stated that it was the older concept that a strong muscle would pull on its opposite weaker "antagonistic" muscle and cause deformity. This is wrong. "Balance" comes rather because central nervous system cells equalize and balance the demands of the muscle pairs. The greatest need, therefore, is to prevent muscle shortening and this may be accomplished by active or passive exercise even when the nerve control has been destroyed by the disease. Thus, patients totally without nerve control of their legs can stand and walk because they have no deformity and can balance, whereas if muscle shortening is permitted to occur they will suffer deformity and be thrown off balance.

A question from the floor brought up the subject of the benefit of early movement especially to prevent the known occurrence of calcific renal deposits. Dr. Compere mentioned the benefits of the oscillating bed and told of one of his patients who was greatly improved when removed from the respirator to such a bed and smaller partial respirator. In six months the renal deposits were smaller and kidney function returned to 100 per cent from 28 per cent.

The question of hot packs vs. hydrotherapy was raised. Dr. Juan Farill, Temporary President, International Society for the Welfare of Cripples, Mexico City, reported good results from hot packs. Dr. Steindler told that he had used hot packs from 1909 and believes they are superior to hydrotherapy because greater heat can be applied and tolerated locally. Hydrotherapy is effective as a medium for exercise since the buoyant lift of the water is of such benefit. All warned against overstretching of muscles.

Dr. Enrique Claveaux, official delegate from Uruguay, told of using artificial fever by diathermy or the use of vaccine injections. Dr. Compere warned that diathermy might cause cessation of growth in the limbs of young children because it destroys the cells of the epiphyses.

The most important complication in convalescence is the emotional disturbance. This was discussed by Dr. R. V. Platou, Head, Department of Pediatrics, School of Medicine, Tulane University, New Orleans, Louisiana.

Dr. Karl F. Meyer, Director, The George Williams Hooper Foundation, University of California, San Francisco, said it was reasonable to believe there are poliomyelitis carriers, but there is little dependable evidence.

It was asked if epileptic attacks might be precipitated by poliomyelitis virus. Dr. Platou felt the answer was: "On the contrary."

Dr. A. Montagne, Chief, Orthopedic Service, Hospital Oboro, Hospital Militar, Lima, Peru, said that poliomyelitis is of only minor significance

in his country; he had seen only fifty-five cases in nine years at his hospital. The Indians are still treated by their native "medicine men."

The Conference Banquet

The grand ball room of the Waldorf-Astoria was converted from a large lecture room to a dining hall with banks of tables on the dais. In addition to the speakers there were many prominent guests, including Mrs. Franklin D. Roosevelt. Dr. Louis H. Bauer, Secretary General of the World Medical Association, was chairman and toastmaster. The invocation was delivered by the Rev. Thomas A. Sparks, Canon of the Cathedral of St. John the Divine.

Mr. Basil O'Connor spoke on infantile paralysis as a world problem which had caused this gathering of scientists from many nations to combine their efforts to stop the rising tide of the disease all over the world. The ultimate goal is the control of poliomyelitis, and through control the elimination of the disease entirely. The National Foundation was formed ten years ago "to lead, direct, and unify the fight against poliomyelitis, and came into being as a logical result of the experiment at Warm Springs, Georgia. It was there in 1924 that Franklin D. Roosevelt went for personal treatment. In 1927 he aided in the organization of the Foundation for aftercare. In the United States during the past ten years hospital beds for poliomyelitis cases have increased from 300 to 700. Despite the increased incidence of the disease there is now less crippling owing to the early diagnosis and prompt modern treatment. Through the March of Dimes much poliomyelitis work is aided also by training of personnel. Volunteers are especially important. Public education is another weapon, and it was successfully used in 1946 in averting the type of panic which prevailed in 1916. In ten years there have been 112,000 cases of poliomyelitis in the United States, in 88,000 of which it is estimated direct financial assistance was given through local chapters of the National Foundation. The Foundation has spent $35,000,000 for medical care for those who could not afford this. In ten years the Foundation has allocated $14,000,000 for scientific research and education, the grants to individuals and institutions demonstrating great flexibility in policy. He concluded by suggesting the establishment of a similar foundation in other countries, maintained by the small contributions of working people of the country.

Dr. R. L. Sensenich, President of the American Medical Association, greeted the conference and guests.

Dr. Frank R. Ober, Professor Emeritus of Orthopedic Surgery, Harvard University, sketched the history of poliomyelitis. It was first recorded by the Egyptians and well described by Michael Underwood in 1774. By 1867, C. Fayette Taylor had published a book stating that the disease was on the increase in this country and advocating rest, splinting, and wet and dry heat, as well as exercises and braces for weakened muscles. The first known epidemic was in 1894 in Vermont, and the first severe one in New York in 1907. There was no attempt to care for weakened and paralyzed children until 1914, when the Rockefeller Institute sent Dr. Robert Levett and Dr. E. G. Martin to Vermont to study the paralyzed patients and prescribe supportive treatments for them. In the New York 1916 epidemic the Lovett plan of organized clinics was established. At the same time Massachusetts had a similar outbreak which led to the organization of the Harvard Infantile Paralysis Commission. A mobile team was established by the late Dr. Arthur Begg and the speaker. About three years ago this Commission was turned over to the National Foundation, which had been established in 1938 to promote research in epidemiology, etiology, and after-effects. Techniques in operative surgery have progressed steadily.

Dr. James Phinney Baxter III, President of Williams College, Williamstown, Massachusetts, delivered the main address of the evening, on "Public Health and Peace." "The three developments which influence most markedly our present existence are the industrial revolution, the rise of nationalism, and the scientific advances of the last half century," he began. "The pilot plant at Oak Ridge demonstrates the ambivalence of the scientific revolution." While the manufacture of fissionable material for an atom bomb is going on within the pile, the use of radioactive tracers has extended the knowledge of physiology, and radioactive iodine and phosphorus have been found to have an importance in therapeutics.

The three great movements of nationalism, industrial revolution, and scientific revolution can become synergistic in the good sense and thereby exert more power for human betterment in combination than the sum of the good each could bring to mankind separately. The task of winning a permanent peace is more complicated than that of winning the greatest of wars. Pious declarations like the Kellogg Pact will not solve the problem.

Dr. Baxter said he was convinced that we should overlook no opportunity for common effort with the Russians that will make both peoples better and more favorably known to each other. The best chance lies in the field of public health. The

medical mission to Moscow in 1944 was very satisfactory. The problems of war and of disease are common to all mankind and if we work together in solving health problems we may find it easier to work together in other fields. This celebration was taking place on July 14, the French national holiday, commemorating the fall of the Bastille. Dr. Baxter hoped that at another International Poliomyelitis Conference we might celebrate the fall of this disease.

V. The Management of Poliomyelitis: The Convalescent Stage

Prof. Arvid J. Wallgren, Professor of Pediatrics, Royal Caroline Medical Institute, Stockholm, Sweden, presided.

Dr. William T. Green, Clinical Professor of Orthopedic Surgery, Harvard University, Boston, gave the paper. He defined the convalescent period as starting immediately after the acute febrile illness and ending when no further recovery in musculature is to be expected, usually from 48 hours after the febrile illness is over to 16 months after onset. Two phases are described: (1) the sensitive phase which lasts from a few days to a few weeks; and (2) the asensitive phase. Treatment is largely empirical. The disease is very variable and characterized by a greater or less degree of spontaneous recovery. Accurate predictions cannot be made early, although the completeness depends largely on the original involvement. Objective criteria for expressing results of treatment in a comparative way are difficult to establish.

Historical. The disease has been described with a reasonable clinical and therapeutic approach since Taylor in 1869 and Wickman in 1905, after a Scandinavian epidemic. Vulpius in 1912 discussed contractures and the "stretch paralysis" mentioned by Taylor was further discussed by Jones in 1911. The early treatment was designed to combat contractures and deformities and re-educate muscles by the use of hot packs, active and passive motions, etc. Lovett did more to put the treatment on a good foundation in the first quarter of this century. Details of supervision and training were outlined. Dr. Jean McNamara advocated prolonged immobilization and little physiotherapy. A variation was the Elizabeth Kenny treatment which discounted the flaccid paralysis and emphasized "muscle spasm," "incoordination," and "mental alienation," or pseudoparalysis. Involved are hot packs on a regular schedule by a particular method with no splints or casts. Muscle education is started relatively early. Curare and prostigmine have been tried recently.

Treatment. The findings in the sensitive phase are paralysis, sensitivity of muscles, and "muscle spasm." Sensitive muscles in "spasm" tend to shorten and pull the part into deformity, and if paralysis exists the inability to oppose such deforming tendencies is greatly increased. If the deformity is maintained the shortened muscles develop a passive type of contracture which becomes fixed and the deformed position of itself is disabling. Deformity tends to progress and is promoted by imbalance. Flaccid paralysis is the main disabling feature of the disease. Improvement in the function of the affected muscles is most during the first 9 months with later improvement continuing, due to hypertrophy and functional improvement arising from use and training. The strength of a muscle depends on the number of functioning neuromuscular units.

The Sensitive Phase. A "muscle estimate" is made by a physical therapist early and gently. Rest and good nursing are essential, with emphasis on gentle handling and control of affected parts. Hot moist heat normally makes the patient more comfortable; and in general lay-on packs for 20 minutes, three or four times in 24 hours have been employed.

Exercises. Passive motion to prevent contractures are started early, usually by a physical therapist, twice daily and following the hot packs. Guided assistive active exercises directed toward the affected muscles are combined as soon as possible. Fatigue is avoided. Active exercises are gradually increased as tolerated.

Muscle Examination. An official scoring is done during the first 4 weeks, every month for 4 months, every 2 months for the remainder of the first year, and every 4 months during the second year.

The Support of Parts. Splints used properly are very valuable. They may be used only part of the day and at night and do not interfere with other treatment.

Underwater Exercises. These are used daily for 20 minutes after the quarantine is over (2 weeks in Massachusetts). The water is at 104° F. and is relaxing, relieves the sensitivity and "spasm," assists in developing ranges of motion, and acts as a medium for promoting active controlled motion.

Respirator patients are removed if possible for exercising; otherwise the exercises are performed on schedule through the portholes.

Prophylactic measures include the prevention of pneumonia and calciuria with renal calculus formation.

The Asensitive Stage. With the disappearance of sensitivity a good percentage of patients mildly

involved may resume normal activities. Hot packs are discontinued except for specific contractures and stretching exercises are designed to develop normal mobility in the parts. If scoliosis can not be corrected by stretching exercises a plaster cast may be employed. Supportive apparatus should be used if necessary and assistive and guided exercises performed. The main objective is to establish weak muscles in the motion pattern for which they were designed. Exercises to produce hypertrophy come later. Fatigue should be avoided. Underwater therapy is very helpful and has an excellent psychological effect on the patient. The general activities are increased with special supervision of the transition to standing position and avoidance of abnormal attitudes and deformed positions. Crutches may be used, but not braces at this stage as they tend to create an abnormal gait. Once it is certain that the potentialities of muscle recovery are reached increasing activity is forced. Then accessory aids such as braces, corsets, and jackets are used.

In 1937, 40 percent were discharged within 3 weeks, 8 percent were kept for 6 months, and 4 percent for a year or more. In contrast, in 1945, 90 percent were discharged within 3 weeks. When patients are discharged it is important that the parents understand the routine completely. Regular medical observation is also necessary. The psychological implications to parents as well as children are of importance, as well as appropriate planning of environment, activities, and education.

The moderator of the panel was Dr. Robert L. Bennett, Director, Physical Medicine, Georgia Warm Springs Foundation, Warm Springs, Georgia.

Dr. Edward A. Strecker, Professor of Psychiatry, University of Pennsylvania, Philadelphia, stressed the psychological aspects, for, as he said, "The disease may make or break its victims." The helplessness of many patients may delay emotional maturity in some and in others develop compensatory energies or abilities. The illness causes a tremendous psychological upheaval to the child and provides severe psychic temptations for the mother and whole family as well. Pseudo, impractical compensations for the inferiority may be unwisely encouraged. Also a disabling illness provides the child with the opportunity to gain the center of the stage and utilize the disability. This is psychologically crippling as the child grows older. The illness should interfere as little as possible with the emotional growing process.

The question of weight control was discussed by Dr. Harry H. Gordon, Professor of Pediatrics, University of Colorado, Medical Center, Denver. The cure for obesity lies in the caloric intake and endocrine therapy has no place in the treatment. This presents an added psychological problem as the obese child often eats from psychic or emotional tensions and not from hunger. The underweight child presents an entirely different problem, and can be corrected by diet and therapy directed toward improving the appetite.

Dr. Strecker added that an oversolicitous mother may indulge the child too much and this brings on the obesity. This may be due to unconscious self-reproach at prior neglect on her part.

Dr. Green pointed out that a paralyzed patient flat in bed may be able to indulge in only one normal bodily pleasure, that is, eating, with the resulting obesity.

Dr. Charles LeRoy Lowman, Director of Education and Rehabilitation, Orthopedic Hospital, Los Angeles, California, felt that even in patients with mild polio a re-check for several years was essential. He added that 80 percent of all persons have some sort of defect of posture and if even a small residual defect from polio were added a deformity might be created. He quoted a follow-up study in California in which it was discovered that 47 percent of patients who had had mild polio showed later postural unbalance and some developed deformities.

Dr. Kendall B. Corbin, Consultant in Neurology, Mayo Clinic, Rochester, Minnesota, stressed the need for a neurological re-check in the slight cases. On later examinations more serious neural involvement may be discovered. He cited epidural myelitis and epidural abscess as examples.

Curare was still considered to be experimental. It had had dramatic effects in some cases, but was still felt to be radical.

The high cost of after-care was again a consideration. Dr. Lowman felt it was an economic waste to treat muscle groups for a year or longer if a deformity were present. He felt orthopedic surgery was indicated to perform muscle transplants.

VI. The Management of Poliomyelitis: The Late Stage

Dr. Carlos E. Ottolenghi, Professor Adjunte de Ortopedia, Buenos Aires, Argentina, presided.

Dr. Joseph S. Barr, Professor of Orthopedic Surgery, Harvard University, spoke on the orthopedic problem that must be faced about 16 months after onset of the illness when spontaneous improvement has ceased. Permanent muscular weakness depends on the extent of the original involvement, the amount of spontaneous recovery,

and the care exercised in treatment throughout. In order to plan the late stage there must be accurate data on the muscle involvement and the patient's functional abilities and disabilities; and the physician must be able to anticipate development of deformities as well as be familiar with a variety of methods of treatment.

The aims of treatment are threefold: (1) the physical is to improve function, prevent and correct deformities, and correct or ameliorate growth disturbances; (2) the social is to help the patient to place his physical handicap in its proper perspective; and (3) the economic is through vocational guidance to help the patient attain economic independence.

In the late stage the child should be seen at least twice yearly until he has attained full growth. The unhurried, detailed examination should note his posture, stance, and gait. Respiratory excursion is measured. Asymmetry of the spine is checked by x-ray. The extremities are checked including leg length, as well as all joints. Growth proceeds normally only when function is normal and treatment is adapted to the needs of the individual patient and his progress noted. In 1945, in the speaker's clinic of 40 adults 75 per cent were gainfully employed, 20 per cent were doing housework or going to school, and only 5 per cent were idle.

DeLorme showed that muscle power may be increased. As the absolute and relative strength of various affected muscles may change spontaneously a definite well-defined exercise program is indicated which may often be used to profit for many years.

Billig has suggested neurotripsy, a treatment aimed at restoring function to paralyzed neuromuscular units by traumatizing peripheral nerves and their myoneural junctions, after which branching of viable neural units to non-functioning muscle fibers may occur.

Substitution for lack of muscle power may be accomplished by (1) training accessory paralyzed muscles; (2) apparatus, which is useful and often necessary, but adds a psychological handicap and physical burden; (3) operative methods, which in recent times are used more than braces, but rarely succeed in restoring normal function. Proper training requires careful consideration, for tendon transplants will fail if muscle training in an unco-operative child cannot be performed. The requirements for this include: (1) joint deformity must not be present; (2) transplanted muscles must be strong enough; (3) the line of pull must be direct; (4) the anchorage should be into bone; (5) the blood and nerve supply must be preserved; (6) muscles with similar actions give better results; (7) the pull must be of the same order as that for which it substitutes; (8) the gliding mechanism must be preserved; (9) the tendon should be attached with proper tension; (10) the joint should be splinted for three weeks postoperatively; and (11) careful functional re-education is essential in all operative procedures. Arthrodesis is most generally applicable. Limitation of the joint motion by bone block (arthrorisis) and tenodesis has been accomplished successfully in many cases.

Specific problems were outlined in reference to the various groups of muscles involved. In the upper extremity difficulties with the hands are very troublesome. Operations to correct opponens paralysis, loss of power in flexion or extension of the fingers and thumb, loss of forearm pronation and supination, as well as flexion of the elbow and others were described. Scoliosis of the spine is one of the major problems and supports which permit slumping have too often been used previously. For progressive increase despite conservative measures spinal fusion should be undertaken. Abdominal muscle weakness or paralysis is common and treated by fascial transplants or abdominal support. Fixed pelvic obliquity is an extremely difficult problem and fusion and fascia transplants have been tried. For the lower extremity braces have been used too freely. A stable, painless, weight-bearing foot without deformity and apparatus is the goal of treatment. There is a multiplicity of stabilization operations. The cure also presents many problems and arthrodesis may be necessary to permit the patient to walk without a brace. Serious hip deformities can often be corrected by surgical methods. Any child with marked discrepancy in muscular strength who develops polio before the age of ten is almost certain to have inequality in the leg length unless measures are taken to prevent it. Sympathectomy may increase the rate of growth by increasing the blood flow. Circulatory disturbances, particularly of lower extremities in cold climates, may be improved by lumbar ganglionectomy. Epiphyseal arrest (epiphyseodesis) may equalize the leg length. Leg lengthening is difficult and satisfactory results are not assured. Leg shortening is the standard operative procedure.

The late stage presents such a variety of problems that treatment must be highly individualized.

Dr. Frank R. Ober was moderator of the panel.

Dr. A. R. Shands, Jr., Medical Director, Alfred I. duPont Institute of the Nemours Foundation, Wilmington, Delaware, re-emphasized the necessity of a preliminary evaluation of the patient: dis-

abilities, abilities, and vocational interests. The object is recovery, both physical and emotional.

Dr. William S. Langford, Clinical Professor of Psychiatry, Columbia University, College of Physicians and Surgeons, New York, spoke on the psychiatric aspects of the parent-child relationship, which although healthy might be upset, and if not too stable might become much worse. The anxieties in parents promote repression in children despite supervision, encouragement, and promotion. Psychiatric care for both parents and child should be instituted as soon as the child becomes sick.

Dr. Shands spoke further on tendon transplants and remarked that if they are effective within six months they will continue into adult life. Dr. Ober noted that tenodesis causes a deformity in a growing child and should be used only on an adult with a foot drop.

Dr. C. E. Irwin, Medical Director, Georgia Warm Springs Foundation, discussed hip deformity, which is the most common cause of scoliosis. A well-defined deformity cannot be overcome by physical measures and operative intervention is indicated. It would form contracture of the fascial tissue and intermuscular fibrous tissue.

Dr. Laurence F. Shaffer, Head, Department of Guidance, Teachers College, Columbia University, New York, discussed the clinical psychologist's contribution. His is one of the co-operating professions and deals with the problem of the whole individual in teamwork with the other specialists.

From the floor an outline of the treatment of scoliosis at the age of 3 and at 20 was requested. Dr. John C. McCauley, Surgeon-in-Chief, New York State Rehabilitation Hospital, West Haverstraw, N. Y., thought the problem at age 3 was very serious. After careful and close periodic observation he felt ankylosis might possibly be necessary. At 20 years, correction should be attempted with stabilization. The later the polio is contracted the less scoliosis ensues.

Dr. Mugrage asked about the establishment of a bone bank and if this were useful for cases in the late stage. Dr. Barr said they were establishing one now and expected it to be very useful, especially in spinal fusion cases where much bone may be necessary.

The function of the Medical Social Worker was discussed by Miss Ethel Cohen, Director, Social Service Department, Beth Israel Hospital. She stated the concept of the patient as an individual being cared for physically, emotionally, and environmentally by a team of workers.

Dr. George C. Deaver, Professor of Clinical Rehabilitation and Physical Medicine, College of Medicine, New York University, New York, emphasized that vocational training should be given a patient only after he can move about and get to a job. Otherwise he suffers great frustrations. The motto of his rehabilitation program is: "Work with the patient and not on him.". Muscle massage is working *on* him, whereas teaching him the proper use of crutches is working *with* him.

VII. Bulbar Poliomyelitis

Dr. James E. Paulin, Professor of Clinical Medicine, Emory University, Atlanta, Georgia, presided.

Dr. Karl T. Neuberger, Professor of Pathology, Medical Center, University of Colorado, Denver, spoke on "*Bulbar Poliomyelitis: Pathological Aspects.*" The pathology of spinal polio has been known for at least twenty years; but knowledge of the histological lesions in the bulbar form is rather new.

Distribution: To evaluate bulbar lesions serial sections are indispensable, as lesions may be scattered. The whole dorsal field appears to be altered with greatest involvement in the reticular substances and ambiguus, hypoglossal, motor vagus, vestibularis, and trigeminus nuclei. The pattern may not be symmetrical and may include the pons as well as the medulla. There are also cerebral lesions. Experimental lesions correspond to those in man. Motor areas show the main damage although sensory nuclei are not spared.

Histopathology: There are no definite gross changes. Microscopically diseased cells are scattered among well-pressured cells. Only at first are polymorphs seen, and they are soon replaced by microglia cells. Enormous numbers of glial cells form "coffins," which blend with the "diffuse tissue infiltrate." There are also areas of true softening of a varying degree of damage to myelin sheaths and extracellular neurofibrils. Perivascular infiltrates soon form mainly at the periphery of the diseased foci and consist of several layers of lymphocytes. Cases of predominantly spinal type show changes also over the dorsum of the medulla.

Character of lesions: The lesions are degenerative and inflammatory. If the virus reaches the nerve cells it apparently attacks individual neurons in an irregular fashion. The perivascular infiltration is regarded as secondary. In addition there is occasionally a true softening of a different pathogenesis possibly caused by a disturbance in blood supply. The histologic features characteristically are excessive coffin formation, large microglial nodules, and diffuse tissue infiltrates. A number of cells may recover.

Clinical Significance: Definite alteration in the nuclei of certain cranial nerves will cause disturbances in the muscles and organs supplied by these nerves. Lesions in the vagus area may be fatal. The general involvement of pons and medulla may be responsible for the clinical feature of muscular spasticity. The lesions of the reticular substance are of the greatest significance and play the main part in practically all fatal cases of bulbar polio. The lungs also may be affected and show edema, congestion, bronchopneumonia, and focal atelectasis.

Dr. A. B. Baker, Professor of Neurology, The Medical School, University of Minnesota, Minneapolis, Minnesota, discussed "*Neurologic Signs in Bulbar Poliomyelitis*," especially those observed during the Minnesota Epidemic of 1946, when there were 711 cases admitted to the University Hospitals. Bulbar involvement occurred in 23 percent of the children under 16 years and in 36 percent beyond this age, a total of 186 cases of bulbar polio. The term "bulbar" is used loosely and denotes involvement of the entire brain stem.

The general symptomatology at the onset is similar in the different forms. In many children actual indication of invasion of the central nervous system is preceded by prodromal symptoms of mild headache, fever, malaise, mild pharyngitis, and occasionally constipation, diarrhea, and nausea or vomiting. The temperature averages 101° to 102° F. In adults the systemic phase may be very brief and in a large number of patients the prodromal symptoms are entirely absent. The specific symptomatology may be classified in 4 groups:

1. Cranial nerve nuclei group. This was the most frequent, comprising 54-56 per cent of the bulbar cases. The upper nerve nuclei involved were those of the third, fifth, sixth, seventh, and eighth. Paralysis or paresis of the seventh occurred in over half of the cases. The involvement of the upper cranial nerves holds no threat to the life of the patient. The most frequently affected nucleus was the tenth in 90 percent. These patients exhibit weakness of the palate, pharynx, and vocal cords, and because of possible occlusion of the upper respiratory tract the lesions furnish an immediate threat to life. Serious obstruction of the airway requires emergency measures. There was a 5 percent mortality rate in the cases with bulbar symptoms limited to the cranial nerves.

2. Respiratory center group. Symptoms of involvement of the respiratory center follow by a few days the onset of cranial nerve paralysis. Irregularities of rhythm and depth of respiration develop with increasing periods of apnea with Cheyne-Stokes periodic respirations. The temperature and pulse rate rise and the blood pressure rises at first, to fall later to shock levels. Definite hypoxia results and an immediate intensification of oxygen is indicated. Because of the damage to the respiratory center any type of sedative is contraindicated in bulbar polio. There was a 69.1 percent mortality for this group.

3. The circulatory center group. Damage in this region produces a number of symptoms of circulatory disturbance, such as variations in blood pressure and pulse and flushed skin. Prognosis is very grave; the mortality rate was 83.3 percent. Fortunately the incidence was only 6.4 percent.

4. Encephalitic Group (Polioencephalitis). Encephalitic symptoms occurred in 72 percent and appeared within the first few days. The patients were apprehensive, fretful, restless, and irritable. Ideas came quickly. There was quivering, trembling, and twitching of the facial muscles. Confusion was prominent, and in some children there was prolonged somnolence. A typical toxic confusional state appears about one week after the onset and lasts about one week. These individuals develop fixed ideas and obvious misinterpretations, etc. Cerebral motor phenomena, including grand mal seizures, are known. It is believed these symptoms are secondary to cerebral hypoxia rather than direct involvement by the virus.

Hypoxia appears frequently in bulbar polio and may result from the following: (1) Cranial nerve involvement causing pooling of secretions in the throat, paralysis of the tongue, laryngeal spasm or vocal cord paralysis, obstruction of the airway, accumulated secretions from inability to cough and aspiration of vomitus. (2) Respiratory center involvement demonstrated by irregular breathing and periods of apnea. (3) Circulatory center involvement causing vasomotor failure. (4) Bulbar and cervical cord involvement resulting in any of the above causes as well as involvement of primary and accessory muscles of respiration. (5) Alteration in the lungs, such as pulmonary edema, atelectasis, or pneumonia.

The stages in hypoxia include the following signs and symptoms: 1. First stage: restlessness, apprehension, anxiety, and sleeplessness. 2. Second stage: florid appearance, increasing pulse and respiratory rate and blood pressure, and euphoria. 3. Third stage: dyspnea, cyanosis, rise in temperature, confusion, and occasional panic. 4. Fourth stage: cyanosis, circumoral twitchings, failure to answer questions, delirium, coma, and shock.

Dr. James L. Wilson, Professor of Pediatrics and Communicable Diseases, University Hospital,

University of Michigan, Ann Arbor, Michigan, spoke on an *"Outline of Essential Treatment of Bulbar Poliomyelitis,"* emphasizing that there is no specific way to treat poliomyelitis in the acute stage. Wherever there is respiratory difficulty oxygen may be of value, although oxygen will not aid the excretion of carbon dioxide.

In treating pharyngeal paralysis the treatment should include: (1) Postural drainage with raising of the feet at least one foot and often placing the patient on his side. (2) Aspiration carried out carefully and gently without traumatizing the tissues or frightening the patient. (3) Tracheotomy if the other two methods are unsuccessful and an airway cannot be established and the patient is unable to rest. (4) Feedings by rectal tap or parenterally. Contraindicated are: (1) Oral feedings or gavage, because of the danger of vomiting and aspiration. (2) Atropine, which only partially dries up secretions and makes them more tenacious and difficult to remove. (3) Sedatives which further depress the vital centers. Successful treatment depends considerably on getting the patient to relax and in general avoiding excitement and fear.

Laryngeal paralysis can most accurately be diagnosed by laryngoscope and one must be prepared to follow this with a tracheotomy. Respiratory center involvement is demonstrated by grossly irregular, curiously slow breathing or hiccough-like respirations.

The respirator is rarely effective in any of the situations which arise from bulbar poliomyelitis.

The panel discussion was led by Dr. Maurice B. Visscher, Professor of Physiology, the Medical School, University of Minnesota, Minneapolis. There was wide diversity of opinion expressed concerning the value and need of tracheotomy.

Dr. Stimson observed that on his service at Knickerbocker Hospital no tracheotomy had been performed in the several years of its existence.

Dr. Robert E. Priest, Assistant Clinical Professor of Otolaryngology, the Medical School, University of Minnesota, Minneapolis, replied that in the 1946 Minnesota epidemic 75 operations had been done in 400 bulbar cases with 29 postoperative patients surviving.

Dr. Edward B. Shaw related that he had rarely seen a case where tracheotomy had been essential.

Dr. Baker explained that in the Minnesota epidemic tracheotomy was done when the disease became progressive. If the patients were not watched they went suddenly into cyanosis and died before they could be helped. The virus was apparently very virulent, for there were 25 percent bulbar cases as compared with the usual incidence of 10 per cent.

Other members of the panel were Dr. H. W. Magoun, Professor of Microscopic Anatomy, The Medical School, Northwestern University, Chicago, Illinois, and Dr. Robert F. Pitts, Professor of Physiology, Syracuse University, Syracuse, New York.

(To be concluded in issue of January 1949)

Influence of the Hypothalamus on Sexual Function

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(Concluded from October 1948)

Hypogonadism Associated with Lesions Involving the Hypothalamus. Hypogonadism has frequently been observed in association with a great variety of lesions occupying the hypothalamus but leaving the pituitary intact. Ordinarily adiposity occurs concomitantly because of the close spatial relation of the hypothalamic mechanisms concerned with fat embolism and gonadal function. In a review of 153 cases of adiposogenital dystrophy (Fröhlich's syndrome) Leschke[76] found that the diencephalon was solely involved in 69 (45.1 percent), both the tuber cinereum and hypophysis in 63 (41.2 percent), and the pituitary alone in 21 (13.7 percent). The manifestations of reduced sexual functions differ in adults and in pre-adolescents. Aside from neurologic disorders, elderly adults complain of amenorrhea, loss of libido, impotence, asthenia, and loss of body hair, symptoms which are sometimes difficult to distinguish from the changes in advancing age. Young women usually complain of failing libido, amenorrhea, scantiness of pubic and axillary hair, and underdevelopment of the breasts, and young men of reduced libido, genital underdevelopment, scanty beard, and feminine appearance. Children generally are undersized, not infrequently have undescended testes, and tend to be obese and rotund. The tumor most commonly involving the hypothalamus is the craniopharyngioma (Bailey[3]; Globus, Zucker and Rubinstein[65]).

A case of especial interest was that described by Collins[55]. It concerned a woman of 28, who had had diabetes insipidus for 10 years, amenorrhea and frequent hot flashes for 8 years, and progressive gain in weight, personality changes, and increasing lethargy and somnolence during the more recent years. Autopsy disclosed an ectopic pinealoma occupying most of the hypothalamus. The pituitary was not invaded by tumor, and while all the cell types were present many appeared shrunken and their nuclei pyknotic. Atrophic changes were observed in the ovaries, thyroid, and adrenal glands.

Another example of gonadal atrophy associated with a hypothalamic lesion was that reported by Stewart[69]. The patient, a male child, appeared normal at birth except for external pseudohermaphroditism. At the age of 3 he became obese, and as time went on, polyuria, polydipsia, somnolence, and hyperglycemia developed. When at the age of 17 the patient died, his appearance was that of a eunuchoid with pronounced feminine characteristics. At autopsy, the hypothalamus was the seat of advanced atrophy and gliosis. The anterior lobe of the pituitary was smaller than normal, but on microscopic examination displayed no significant change. The testes were undeveloped, there being no evidence of spermatogenesis or other cell differentiation.

Hypergonadism Associated with Lesions Involving the Hypothalamus. Hypergonadism (pubertas praecox) also has been found to occur in a great variety of intracranial lesions, non-neoplastic and neoplastic. When associated with tumor involving the hypothalamus it has been observed, with rare exceptions, only in pre-adolescents, and then predominately in males. It is manifested in females chiefly by the early appearance of the menstrual cycle and an undue prominence of the breasts, and in the male by enlargement of the external genitalia, premature appearance of pubic, axillary, and facial hair, and exaggerated libido.

Since a large proportion of cases of pubertas praecox are associated with tumor of the pineal body, the question has been raised as to whether or not the pineal body itself plays a role in the genesis of the disorder. In an analysis of the literature, Bing, Globus and Simon[19] have found

that of 177 cases of pineal tumor there were only 56 in the age group in which pubertas praecox can be recognized (i.e., in those less than 16 years of age). Of these 56, there were 21 (37.5 per cent) who displayed the disorder, and in each of the 21 there was involvement of adjacent parts of the brain, including the corpora quadrigemina, the thalamus, and the hypothalamus. Significantly, of these 21 cases there were 15 (71 percent) in which the manifestations of pubertas praecox were associated with clear cut evidence of hypothalamic disorder—polydipsia, polyphagia, somnolence, and obesity.

That the odds overwhelmingly favor the hypothalamus rather than the pineal body as the site responsible for the disorder is indicated by the occurrence of pubertas praecox in cases of hypothalamic damage in which the pineal body was not involved. Weinberger and Grant[108] reviewed 17 cases in which pubertas praecox was associated with hypothalamic tumor. In 6 of these there were no other signs of symptoms referable to the hypothalamus, such as diabetes insipidus. One patient, aged 15, had so much interest in girls that his mother wanted him castrated; another, 4 years old, had great strength and had attacked women; still another, aged 3, had a deep voice, mustache, extraordinary muscular development, and a bone age of 13. In some instances the hypothalamus was the only structure occupied by the tumor, and in 3 the tumor was virtually restricted to the mamillary bodies. In all except 4 cases (in which there were suprasellar tumors), the lesions involved predominantly the posterior part of the hypothalamus, i.e., much the same region where pineal tumors would be expected to exert pressure.

The pathologic physiology underlying pubertas praecox is entirely obscure. Presumably the anterior pituitary is stimulated to secrete an increased amount of gonadotrophic hormones in these patients. According to Weinberger and Grant,[108] the precocity may be due to destruction of a posterior hypothalamic mechanism with release of a more rostral hypothalamic innervation of the anterior lobe of the pituitary. Reports on the assay of gonadotrophins and estrogens in pubertas praecox have been few. In one case recorded by Bronstein, Luhan and Mavrelis[18] in which a small tumor-like mass was found beneath the floor of the IIId ventricle between the optic chiasma and the mamillary bodies, urinary assays for gonadotrophins and estrogens were negative. Another case, reported by Gross,[58] concerned a 26-month-old girl in whom a tumor occupied the posterior part of the floor of the IIId ventricle. Estrogenic assays on successive days yielded the following results: 405, 324, 648, 36, 175, 270 and 12 international units. These values were regarded as abnormally high, since a normal adult woman excretes between 50 and 600 units daily.

Other Sexual Disturbances in the Presence of Lesions of the Hypothalamus. An unusual type of sexual disturbance associated with a lesion of the hypothalamus has been reported by Cleghorn et al.[34] The patient, a male 23 years of age, had had progressive somnolence over a period of 4 years. Changes in personality and intellect also had occurred, and he frequently masturbated. Despite a voracious appetite he gradually lost weight. There had never been any noticeable body hair and he had never shaved, though he had a fine down on his upper lip and a few hairs on his chin. His testes had been steadily decreasing in size since the age of 17, now being the size of "small marbles." The penis was of normal size. Since no mention was made of the breasts, there presumably was no gynecomastia. During his latter days he had symptoms of steadily increasing intracranial pressure. Autopsy disclosed pinealoma invading the midbrain and hypothalamus. Histologically, the testis showed complete atrophy of the seminiferous tubules and marked hyperplasia of the interstitial cells, whereas no changes were observed in the prostate, seminal vesicles, epididymis, pituitary, thyroid, parathyroids or adrenals. This case resembles in some respects those reported by Klinefelter, Reifenstein and Albright,[73] in which there were gynecomastia, small testes and aspermatogenesis associated with evidence of normal or slightly reduced function of the interstitial cells and an increase of follicle stimulating hormone in the urine. Cleghorn and his associates attempted the difficult task of explaining the findings in the testes (i.e., the total atrophy of the seminiferous tubules and the hyperplasia of the interstitial cells) on the basis of a disturbance of pituitary hormone output caused by alterations in the hypothalamus. The contributions of four more years of experimental work had not made any easier for Klinefelter and his associates the task of explaining the somewhat similar findings in the testes in their cases. One may anticipate increasing difficulties in this regard until the triangle of hypothalamo-pituitary-gonadal mechanism is understood.

Sexual disturbances in Patients with No Evidence of Organic Abnormality. Menstrual irreg-

ularities not infrequently occur in physically normal individuals under the influence of worry, fright, or other emotional stress, e.g., in young girls away from home for the first time, or in women suffering from sexual maladjustments or from fear of pregnancy. The disturbance is most frequently one of amenorrhea (Reifenstein[92]) although metrorrhagia may sometimes occur (Fremont-Smith and Meigs[53]). It has been assumed by Theobald,[101] Loeser,[78] and others that the emotional disturbances block the discharge of impulses from the hypothalamus to the anterior pituitary. Klinefelter, Albright and Griswold[72] have reported a normal level of urinary follicle stimulating hormone in a group of such patients with amenorrhea. Since these patients had a resting type of endometrium and failed to menstruate following a 5-day course of progesterone therapy, Klinefelter and his associates inferred that they were lacking in estrogenic hormone. They suggested that the "primary abnormality in these cases may be a complete lack of release of luteinizing hormone which lack in turn may be due to a lack of stimulation of the pituitary over the hypothalamic-pituitary nervous pathway."

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The extensive research grants program of the Public Health Service is administered by the Division of Research Grants and Fellowships of the National Institute of Health. Three councils —the National Advisory Health Council, the National Advisory Cancer Council, and the National Advisory Mental Health Council— authorized by Congress, recommend to the Surgeon General the granting of funds to asist "universities, hospitals laboratories, and other public or private institutions, and individuals" in advancing medical and scientific knowledge.

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International Society of Hematology

August, 1948

CARROLL LAFLEUR BIRCH, M.D.

THE INTERNATIONAL SOCIETY OF HEMATOLOGY held its first meeting in Buffalo from August 23 to 26, 1948. This Society is an outgrowth of the International Rh and Hematology Conference which was held in Dallas, Texas, and in Mexico City from November 15 to 23, 1946. The conference was organized as a joint undertaking by Dr. Joseph M. Hill and Dr. Sol Haberman of the William Buchanan Blood Center, Baylor Hospital, Dallas, Texas, and Dr. Eduardo Uribe Guerola of the Juarez Hospital, Mexico City, then President of the Second Mexican Congress of Blood transfusion.

The inspiration received from the free exchange of scientific information by the workers from various countries who reported on the many phases of the broad field of hematology resulted in the organization of the society. Since hematology has become of sufficiently impelling interest to so many individuals throughout the world, an organization devoted to this interest appeared to be fully justified. It was believed that the convening of different groups of individuals—clinicians, pathologists, clinical pathologists, chemists, immunologists, geneticists, and the like—would offer distinct benefits to all concerned and that the gathering of individuals from different parts of the world would help to foster important relationships and to break down the barriers of the printed word. For these reasons a truly International Society was organized. Through Dr. Ernest Witebsky an invitation was extended to hold its formal meeting in Buffalo, New York. (From the Introduction to the Official Program of the new society.)

This meeting was a great success. Registrations numbered 690. The society was organized with 90 charter members and 120 applications for membership were received during the meeting. Nineteen countries sent representatives, three of whom were women, from Poland, Turkey, and Brazil.

Dr. Birch is associate professor of internal medicine, University of Illinois, Chicago.

Every detail of the meeting was carefully planned including local information, interpretation service, women's committee, equipment committee, press room, etc.

Entertainment included the official banquet on August 25 at which the representatives of 19 countries spoke. Most of the talks were delivered in admirable English. Those who used their native tongues spoke so eloquently that the meaning was clear even though the individual words were not understood. All relations were so cordial that international friction seemed impossible. (Perhaps hematologists should be in the diplomatic service.)

The scientific exhibits were well chosen and instructive. Two motion pictures were shown, one on "Bone Marrow" the other on "Replacement Transfusion."

The scientific session was opened with an address of welcome by Dr. Stockton Kimball, Dean of the University of Buffalo.

August 23 was devoted to the presentation of papers and discussions on hemorrhagic diseases and blood coagulation. Thirteen papers were read. Dr. Paul A. Owren of the University of Oslo spoke on "The Fifth Coagulation Factor (Factor V) and Its Significance." He gave a brief survey of the factor and its action in the coagulation process, and outlined a new method for its isolation and preparation. He discussed the clinical significance of factor V, particularly in liver disease and in dicumarol therapy.

Dr. Robert Gwyn Macfarlane and Rosemary Giggs from Radcliffe Infirmary, Oxford, England, gave a paper on "Some Problems of Prothrombin Estimation." Dr. Macfarlane began by showing a lantern slide illustrating the theory of coagulation ten years ago. It consisted of two brief lines. Then he presented a very complicated slide in three colors with squares, oblongs, and arrows going in various directions, and said: "This is the present day theory but it is obviously out of date for it was made two months ago." He went on to compare various methods of estimating prothrombin and emphasized the importance of the procedure in Vitamin K deficiency and in dicumarol therapy. He concluded by saying: "The practical implication of this is that serious overdosage with

dicumarin may result from faulty prothrombin estimation. From the theoretical aspect the different behavior of the different thromboplastins, and their possible relationship to the recently recognized accelerators of prothrombin conversion is of considerable interest."

August 24 was devoted to presentation of papers and discussions on anemias, iron metabolism, and stable isotopes. Dr. David Shemin and Dr. Irving London from Columbia University gave a scholarly paper on "The Biological Synthesis and Metabolism of Porphyrins." Dr. John Tinsley and Dr. Carl Moore of Washington University read an instructive paper on "Inhibition of Erythropoiesis by High Concentrations of Inspired Oxygen." This paper described observations which demonstrate that the continuous inhalation of 50 to 95 percent oxygen by human beings causes a depression of erythrogenesis. Studies were made on patients with several types of anemia and on hematologically normal men. Patients with sickle cell anemia and congenital hemolytic icterus were given high concentrations of oxygen for 8 to 14 days. The reticulocytes decreased dramatically and the red blood cell and hemoglobin values fell significantly. When inhalation of atmospheric air was resumed a remarkable reticulocytosis developed and the erythrocytes rose rapidly to pre-oxygen levels. Patients with pernicious anemia in relapse developed submaximal reticulocyte responses after administration of liver extract while they were inhaling oxygen. The rate of utilization of intravenously injected radioiron in the synthesis of hemoglobin is reduced by half during hyperoxia. The author also discussed the concept that oxygen tension is one of the physiologic regulators of erythropoiesis.

On August 25 papers were presented and discussed on "Blood Cell Morphology, Radioactive Isotopes, and Leukemia." Six excellent papers were presented. Dr. O. P. Jones of the University of Buffalo gave a report on "New Interpretations of Nuclear Patterns of Immature Blood Cells." Dr. Jones emphasized that when immature cells are studied by various cytologic, cytochemical, and optical techniques, it was found that organoids—chiefly mitochondria—are preserved in the thin layers of cytoplasm above and beneath the nucleus in dry fixed smears. In this location mitochondria appear as negative images and contribute to what hematologists have called parachromatin. By use of the phase microscope the cell can be studied in three layers:—above the nucleus, through the nucleus, and below the nucleus.

August 26 was devoted to presentation of papers and discussion on transfusion and immunohematology. Twelve fine papers were read dealing chiefly with transfusion reactions, responses to various antigens, sensitization, the Rh group, inheritance of blood groups, the hemolytic mechanism, transfusion hemosiderosis, and exchange and replacement transfusion.

Journal of the
AMERICAN MEDICAL WOMEN'S ASSOCIATION

INTERNATIONAL SECTION

MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION

PROF. A. CH. RUYS, *President*
Hanthorstratt 50, Amsterdam Z,
The Netherlands.

DR. DORIS ODLUM, *Hon. Treasurer*
56 Wimpole St.,
London, W.1., England.

DR. G. MONTREUIL-STRAUS, *Hon. Secretary*
75 rue de l' Assomption,
Paris 8, France.

THE WORLD MEDICAL ASSOCIATION ASSEMBLY

Mary Steichen, M.D.
Observer for the A.M.W.A.

THE WORLD MEDICAL ASSOCIATION opened its four day session in Geneva on September 8 in an atmosphere of sober concern for the problems facing it. The physicians representing Medical Associations in all parts of the world were noteworthy for their intent concentration on their task and for their lack of insistence on personal or political considerations. Under the able chairmanship of Dr. Eugene Marquis of France, delegates from medical associations in the following countries took part in the proceedings:

Australia, Austria, Belgium, Bulgaria, Canada, China, Cuba, Denmark, Dominican Republic.

Ecuador, Eire, France, Great Britain, Iceland, India, Italy, Luxembourg, Netherlands, Greece.

Norway, Pakistan, Palestine (Jewish), Peru, Philippines, Spain, Sweden, Switzerland, Turkey, U. S. A.

This being only the second meeting of the WMA, it is apparent that the intervening year might have been spent chiefly in organizational and administrative activities. The permanent headquarters are in New York at the Academy of Medicine, under the secretary-generalship of Dr. Louis H. Bauer, trustee of the American Medical Association. Assistant secretaries, who act in their general regions, are Dr. P. Cibrie (France), Dr. J. A. Bustamante (Cuba), and Dr. S. C. Sen (India). Funds for the support of the headquarters office are being generously guaranteed by the United States Committee of the World Medical Association, up to the amount of $100,000.

What is particularly impressive is that several studies have been carried on in the past year, and their results were given to the Assembly. I am not going to attempt to cover all the ground, but here are some of the highlights:

Universal Medical Diploma: The results of a questionnaire sent to all medical associations convinced the Assembly that the project was impracticable, and it was voted down.

Solemn Pledge to be administered to all doctors at time of graduation. The text was approved but no association is bound thereby to use it verbatim or at all. It was merely pointed up as a useful tool for raising the moral standard of the medical profession.

War Crimes: The results of the United Nations War Crimes Commission survey were presented to the Assembly, as well as WMA's own resolution on the "German Betrayal and a Re-statement of the Ethics of Medicine." It was hoped that a German Medical Association might soon be constituted which would be capable of repudiating in the strongest possible terms the crimes committed against humanity by members of their profession, and which would be in a position to participate in the WMA.

Special Investigation No. 1. A Draft Report on the Medical Profession in Twenty-three Countries: This interesting report contains in its forty-four pages a concrete study of medical organization and practice as they exist in countries as varied as South Africa, Eire, Iceland, Palestine (Arab) and Palestine (Jewish), China, etc. The study is particularly fascinating because it enables one to make a quick comparison between countries operat-

ing or not operating under various social insurance or national health schemes. Some recommendations are made, certain of which bear a close relationship to recommendations adopted by the Assembly relating to social security. Copies of this report may be obtained from the WMA office and will repay reading.

Postgraduate Medical Education: Dr. Pridham of England drew attention to the following two important facts: (1) that undergraduate medical education is in the hands of the governments or public authorities of the respective countries, whereas postgraduate medical education is very largely in our own hands; (2) that undergraduate medical education is usually undertaken in the country of residence, whereas postgraduate medical education is often undertaken in another country, and many countries have no facilities for this postgraduate education. Dr. Hartwich of Austria presented his preliminary study on the subject, and the Assembly authorized the Council to appoint a special committee to study further the standards and facilities for postgraduate education in various countries, and to make recommendations. It can be seen that this study should have far-reaching results in ultimately raising the standards of medical practice throughout the world.

Bulletin: The first number was brought out in July at the offices of the honorary secretary, Dr. Charles Hill, at the British Medical Association House. It was agreed to continue the Bulletin on a quarterly basis, and to issue it in the three official languages (French, English, Spanish). Dr. Morris Fishbein accepted the job of editor (unpaid for the first year at least), the editorial board consisting of the secretarial staff, with nine collaborating editors appointed from different parts of the world. Your observer feels that subscribing to the WMA and WHO Bulletins might be as much of a "must" for a physician as subscribing to the JAMA.

The Physician and his Relationship to Social Security: Your observer was interested to hear the discussion of this controversial subject by doctors from countries with and without systems of medical insurance. Your observer feels that the final report of the results of the discussion will most certainly appear in the Bulletin and therefore prefers not to report sketchily something that is so important and that should appear in toto.

These, then, are the highlights. A few additional observations may be of interest.

Dr. Hill of the BMA was made president-elect for 1949, and the next World Medical Assembly will be held in London. Dr. Jaroslav Stüchlik of Czechoslovakia had been president-elect, but resigned through force of circumstances. He was present at the Assembly and was given a warm welcome and special recognition by his fellow delegates.

Dr. Cibrie of France was appointed permanent observer to UNESCO in Paris, and Dr. Maystre, president of the Association des Médecins du Canton de Genéve, was appointed permanent observer to the WHO and to ILO. As your observer reported previously, the permanent seat of the World Health Organization is in Geneva. With a permanent WMA observer to WHO in Geneva, and a WHO Liaison Office in New York close to the WMA office, the two organizations should work very closely together. Dr. Calderone, Director of the WHO Office in New York, acted as WHO observer at the WMA Assembly. The WHO as one of its first official acts recognized WMA as one of the first non-governmental agencies with which it established co-operative relations.

It must be remembered that WHO and WMA are different in make-up but complementary in character. WHO is intergovernmental, being made up of *delegates of governments, acting for those governments;* WHO is a specialized agency of the United Nations. WMA is *non*-governmental, made up of *delegates of Medical Associations acting for those associations.* Dr. Calderone, in his speech of welcome to WMA from WHO, emphasized that WHO counts on "you in the WMA as the ultimate effectors for any and all projects leading toward total health." Governments will bind themselves to various concerted actions in all health fields through the World Health Organization but "in each and every country it is the practising physician who will be making the diagnoses, treating the ills, and gearing his efforts into such governmental health projects as are in existence. WHO looks to those physicians to be articulate and forceful figures in their own communities not only as regards good medical practice but also as regards fundamental philosophies of public health, preventive medicine, and the development of sound social thinking."

Your observer has been deeply impressed by the two meetings, WHO and WMA. Both were conducted in such a spirit of tolerance and concern for the job as to serve as outstanding examples in this day of political bellicosity. Both have developed broad outlines for *world* thinking, *world* participation, and *world* achievement for the physician, be he in the field of public or of private health. Both offer a challenge to each one of us to renew our efforts to know ourselves, know our country, know our world. And both offer to the physician that opportunity that has never been left unmet—to serve his patients by giving just a little more of himself in time, effort, and heart.

Journal of the
AMERICAN MEDICAL WOMEN'S ASSOCIATION

ASSOCIATION NEWS AND ANNOUNCEMENTS

MESSAGE FROM THE PRESIDENT

THE OCTOBER JOURNAL deserved careful reading, for it was impressive as evidence of the wide contacts which have been developed for the Association with medical women outside of the United States. These contacts are valuable, not only to members of the Association and to medical women everywhere, but to the whole great movement for world understanding and unity. We should do all we can to increase these contacts. The JOURNAL, as the official organ of the Association, has already accomplished much, but its efforts must be supplemented by personal contacts made by the members themselves.

Looking back, one realizes how much the American Women's Hospitals Committee, under Dr. Lovejoy, has contributed through the years to this high purpose. Dr. Lovejoy's report to the Association at the Annual Meeting in June should have careful study. It is a record of which we can be proud. (See the Supplement to the JOURNAL for September 1948.)

Other reports made at the same meeting also give the members of the Association cause for great satisfaction. At the moment I have in mind especially the reports of the Chairman of the Scholarship Awards Committee, Dr. Hannett, and of the Chairman of the Scholarship Funds Committee, Dr. Koeneke. Through these two committees the Association gives needed assistance to young women studying medicine. From past experience we know how great has been the return in the accomplishments of some of those who without our help might never have been able to complete their training. These two committees represent one of the most worthwhile activities of the Association.

At Dr. Koeneke's earnest request last June she was relieved of the chairmanship of the Scholarship Awards Committee, and Dr. Jean Crump, who is especially qualified through her association with the Woman's Medical College of Pennsylvania, has been appointed. The record so far this year bears out the confidence that we placed in her.

The Committee on Organization and Membership, of which Dr. Faith W. Reed is chairman, should be especially commended for the definite increase in membership which is evident in the reports received from our Treasurer, Dr. Mary Riggs Noble. Dr. Reed is now enthusiastically working on the Junior Branches, suggested by Dr. Gardner, and we look for an excellent report of progress at the Mid-Year Meeting.

I want to urge all of you who have any matter to bring up at that meeting to come prepared with a thoughtful presentation so that there can be open and intelligent discussion. Let us try to give at this meeting a review of accomplishments of the past six months and an outline of what we hope to accomplish during the six months ahead of us.

Elsie S. L'Esperance

PROGRAM MID-YEAR BOARD MEETING
December 4 and 5, 1948
Hotel Pierre
2 East 61st Street
New York 21

Saturday, December 4

9:00 a.m. ..... Registration
10:00 a.m. to 12 noon ..... Business meeting
12:30 p.m. ..... Luncheon, Hotel Pierre
2:00 to 5:00 p.m. ..... Business meeting
7:00 p.m. ..... Dinner, Hotel Pierre

Sunday, December 5

9:00 a.m. ..... Business meeting
3:30 p.m. ..... Tea at New York Infirmary, 321 East 15th Street

* * *

Reservations for the luncheon and for the dinner should be made as early as possible.

Register Now for Mid-Year Board Meeting in December And Annual Meeting In June

Mid-Year Meeting

The Mid-Year meeting of the Board of Directors of the American Medical Women's Association will be held at the Hotel Pierre, East 61st Street, New York on Saturday and Sunday, December 4 and 5. Hotel reservations should be made as early as possible. It is hoped that there will be a full attendance of Officers, Regional Directors, and Chairmen of Standing Committees, and that each branch will be represented by an official delegate.

Annual Meeting

The Annual Meeting of the American Medical Women's Association will be held on June 4-5, 1949 at the Hotel Dennis in Atlantic City, New Jersey. It is advisable to make your reservation for this meeting immediately. If you wish to stay over for the American Medical Association meetings it will be necessary to send in the American Medical Association registration blank which will later appear in the Journal of the American Medical Association.

Those who are registered at the Hotel Dennis for the American Medical Women's Association meetings will be given first consideration in having their stay extended through the meetings of the American Medical Association.—HANNAH E. SEITZICK-ROBBINS, M.D., *Chairman of Arrangements, Annual Meeting.*

NEW ACTIVE MEMBERS

ILLINOIS

Mary C. Patras, M.D.—1817 South Loomis St., Chicago. M.D., Loyola University, 1935. Member of A. M. A., County Medical, and American Academy of General Practice. Endorsed by Drs. Luella E. Nadelhoffer and Evangeline E. Stenhouse.

NEW YORK

Gertrude H. B. Nicolson, M.D.—112 East 74th St., New York 21. M.D., New York Medical College for Women, 1919. Member of A. M. A., County Medical, N. Y. Academy of Medicine, American Board of Pediatrics. Specialty: Cardiology. Endorsed by Drs. Elise S. L'Esperance and Mary Walsh.

OHIO

Marjorie Ann Grad, M.D.—1506 Chase Ave., Cincinnati 23. M.D., University of Cincinnati, 1947. Member of Cincinnati Academy of Medicine. Endorsed by Drs. Dora F. Sonnenday and Henrietta Marie Miller.

PENNSYLVANIA

Marion Abbott Boyd, M.D.—315 N. Bowman Ave., Merion Station, Pa. M.D., University of Cincinnati, 1928. Member of Cincinnati Academy of Medicine, Ohio State Medical Association, Ohio and American Student Health Associations. Endorsed by Drs. Helena T. Ratterman and Dora F. Sonnenday.

WEST VIRGINIA

Beatrice H. Kuhn, M.D.—1109 Quarrier St., Charleston. M.D., Duke University, 1943. Member of A. M. A., County Medical, Alpha Omega Alpha. Specialty: Dermatology and Syphilology. Endorsed by Drs. Irma Henderson Smathers and Mary V. Gallagher.

TO THE BRANCH SECRETARIES

The Editor of the JOURNAL asks that Branch Secretaries send their programs for the coming year for publication in the Journal. The time, place, and date of the meetings should be given, the topics to be discussed, etc. These notices should be sent direct to the Editor, Dr. Ada Chree Reid, 1 Madison Avenue, New York 10, N.Y. It is believed that the programs will be of interest to all and of help to the officers of other branches.

If you desire a new location or position . . .

If you need an assistant or associate, partner or successor . . .

If you want to buy or sell a practice, apparatus, instruments or books . . .

The JOURNAL makes available to you through its classified columns a concentrated assemblage of those throughout the United States who would be interested in your offer.

If yours is an ethical proposition for medical women and you're looking for the natural medium to advertise it, these columns are published for you.

The cost is only six cents per word (two dollar minimum per advertisement).

JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION
2222 Avenue A—Oaklawn
Texarkana, Texas

Journal of the
AMERICAN MEDICAL WOMEN'S ASSOCIATION

EDITORIAL SECTION

A NEW DEPARTMENT

IN THE JOURNAL there now appears a new section which the editors hope will prove of value as a method for keeping its readers informed as to the latest developments in the various fields of medicine, viz., a report in some detail of the proceedings and discussions at national and international scientific meetings. Usually the papers presented at these meetings are published some time later in the specialty journals and hence are not readily available to physicians outside of that specialty affiliation. The high spots of the discussions will be reported in this section: for further or more exact information the reader may refer to the specialty journal.

The opening article in this new department appeared in the October JOURNAL and was the report by Dr. Doris Odlum of the International Congress on Mental Health. In this issue we present two reports, one by Dr. Margaret S. Tenbrinck of New York on the First International Poliomyelitis Conference and the other by Dr. Carroll L. Birch on the First International Congress on Hematology. The poliomyelitis report is given in some detail, in fact is presented as a symposium on the subject because of the current epidemic in which, at the time of this writing, September 24, poliomyelitis cases topped the peak week's figures for the 1946 epidemic. Last week showed a decided increase over the previous week. The total number of cases to date this year is 16,029, which is more than double the five year median expectancy of 8,009. The report is of interest not only because of its timeliness but also because it demonstrates the varying character of a single disease as influenced by changes in climatic and other environmental factors. Moreover, the lessons learned in combating poliomyelitis can be applied to the conquest of virus disease in general.

Recent advances have taken place to a considerable degree in the field of blood disorders, to such an extent that an entire congress has been devoted to a discussion of this subject. Hematology has become a specialty in itself; nevertheless it remains a subject of paramount importance in all fields of medicine.

We trust this new department will prove interesting and informative. Reports of other scientific meetings will appear from time to time.

* * *

WORDS TO OUR ASSOCIATE MEMBERS

A NEW DEPARTMENT we should like to establish is a "Residents' Round Table" in which the associate members—residents, interns, and those just beginning practice—would present (1) queries in regard to medical problems, (2) subjects for discussion about which they desire additional information, and (3) case reports. As Oliver Wendell Holmes said, "There is no form of lead poisoning which more rapidly and thoroughly prevades the blood and bones and marrow than that which reaches the young author through mental contact with type metals . . . In that fatal year (i.e. as a medical student) I had my first attack of author's lead poisoning and I have never got quite rid of it from that day to this." So we recommend to our younger members that they early acquire the "intoxicating pleasure of authorship" beginning with case reports, presenting the material concisely, and by this experience acquiring a facility for future medical writing on a larger scale. Residents, we await your arbeits!

* * *

The editors are grateful to those readers who returned replies to the questionnaire. Constructive criticism and valuable suggestions were received which will be of great help in planning future numbers of the JOURNAL. The editors welcome all suggestions and look hopefully forward to receiving more replies, particularly replies from our new members and from our resident and intern readers.

Opportunities for Medical Women

In June, en route to the Chicago medical meetings, I visited the Veterans Hospitals of Branch 12 in my official capacity as Branch Chief Consultant to women veterans. It was gratifying to find several women physicians on the staffs of the Veterans Hospitals. It was even more gratifying to find the non-discrimination advocated by the Government actually practiced in Branch 12. There are, however, many factors that will deter women from seeking positions in these institutions. There are no services in obstetrics and pediatrics, very little women's adult medical work, and also very little gynecology. For those interested in psychiatry, tuberculosis, physical medicine, and geriatrics excellent opportunities exist. Certain residencies are also open to women.

—H. E. Thelander, M.D.

Women physicians have been recognized by the Veterans Administration through the appointment of ten consultants on medical care for medical veterans in the various VA hospitals and homes. These physicians are all veterans of World War II: Dr. Marion C. Loiseaux (Cornell Medical College, '31) of Boston; Dr. Margaret Janeway (Columbia P & S, '37) of New York; Dr. Jane Liebfried of Philadelphia; Dr. Gertrude R. Holmes (Univ. S. C., '33) of Greenville, S. C.; Dr. Grace Haskin (Western Reserve, '31) of Cleveland Heights, Ohio; Dr. Angie Conner (Woman's Medical College, '37) of Fort Thomas, Ky.; Dr. Elizabeth Fletcher (Univ. of Ark., '34) of Little Rock, Ark.; Dr. Eleanor B. Gutman (Yale, '30) of Coquille, Ore.; Dr. H. E. Thelander (Univ. of Minn., '24) of San Francisco; and Dr. Ruth Bergess (Univ. of Utah) of Roosevelt, Utah.

OPPORTUNITIES FOR MEDICAL WOMEN WITH THE VETERANS ADMISTRATION

A limited number of internships in Veterans Administration hospitals will be offered qualified medical graduates. The internships will be limited to the 75 VA hospitals now offering residency training programs in co-operation with 59 class A medical schools over the country. They will be further limited to those hospitals which have bachelor quarters available on the station grounds. A survey is in progress to determine what housing is available.

Two types of internships will be offered: (1) "Straight," for surgery, general medicine, and other "straight" subjects; and (2) "Rotating," in which interns study, under a rotating schedule, surgery, general medicine, and other related subjects. Arrangements will be made for affiliated training in other than VA hospitals for obstetrics and pediatrics. Such affiliated training may not involve more than 20 per cent of a year. The hospital at which such affiliated training is secured must be approved for internship by the Council on Medical Education and Hospitals of the American Medical Association. "Mixed" internships will not be offered.

Internships will be for one year, subject to reappointment for one year if desired and recommended by the local dean's committee. The deans' committees, composed of members of university faculties or prominent local doctors, supervise the residency training program and will also supervise internship training.

Annual pay for interns will not exceed $1,800 a year. Quarters, subsistence, and laundry will be furnished. The stipend for interns at each hospital will be determined by VA's chief medical director on recommendations of the deans' committees and in conformance with the existing scale of remuneration for interns in the locality. Interns will be appointed in the VA in accordance with the national policy for all medical schools and hospitals, once each year on November 15, their tour of duty to begin the following July 1 or January 1 following July 1.

The new program is under the supervision of Dr. Paul B. Magnuson, VA's chief medical director, and Dr. Edward Harvey Cushing, assistant medical director for research and education in VA's Department of Medicine and Surgery. Dr. Cushing, formerly associate clinical professor at Western Reserve University, Cleveland, Ohio, handled many of the details in establishing VA's

residency training and is in charge of VA's research activities into the causes and cures of little known diseases among veterans.

The 75 VA hospitals which now have residency training programs and the universities or other agencies with which they are affiliated are:

VA Hospital	University
North Little Rock, Arkansas	University of Arkansas
Los Angeles (Sawtelle), California	College of Medical Evangelists; University of Southern California; University of California at Los Angeles
Palo Alto, California	Stanford University; University of California at Los Angeles
San Fernando, California	College of Medical Evangelists; University of Southern California; University of California at Los Angeles
San Francisco, California	University of California, Berkeley; Stanford University
Van Nuys (Birmingham), California	College of Medical Evangelists; University of Southern California; University of California at Los Angeles
(Residency training also is offered at the mental hygiene clinic, in the VA regional office, 1380 South Sepulveda Blvd., Los Angeles, and in the VA regional office at 49 4th Street, San Francisco.)	
Fort Logan, Colorado	University of Colorado
Fort Lyon, Colorado	University of Colorado
(Residency training also is offered at the mental hygiene clinic, in the VA regional office at 1108 15th Street, Denver, Colorado.)	
Newington, Connecticut	Yale University
Washington, D. C.	Georgetown University; George Washington University: Howard University
(Residency training also is offered at the mental hygiene clinic, in the VA regional office, 1825 H Street, N. W., Washington, D. C.)	
Coral Gables, Florida	Veterans Administration
Augusta, Georgia	University of Georgia
Chamblee, Georgia	Emory University
Downey, Illinois	Northwestern University and Loyola University
Hines, Illinois	University of Illinois; Northwestern University; Loyola University
(Residency training also is offered at the mental hygiene clinic, in the regional office, 366 West Adams Street, Chicago, Illinois.)	
Indianapolis, Indiana	University of Indiana
Marion, Indiana	University of Indiana
Des Moines, Iowa	University of Iowa
Knoxville, Iowa	University of Iowa
Topeka, Kansas	University of Kansas, Veterans Administration
Wadsworth, Kansas	University of Kansas
Wichita, Kansas	University of Kansas
Lexington, Kentucky	University of Louisville
Louisville, Kentucky	University of Louisville
New Orleans, Louisiana	Louisiana State University; Tulane University
Fort Howard, Maryland	Johns Hopkins University
Perry Point, Maryland	Johns Hopkins University; University of Maryland
(Residency training also is offered at the mental hygiene clinic, in the VA regional office, St. Paul and Fayette Streets, Baltimore.)	
Bedford, Massachusetts	Boston University; Harvard University; Tufts University
Framingham, Massachusetts	Boston University; Harvard University; Tufts University
Northampton, Massachusetts	Yale University
Rutland Heights, Massachusetts	Boston University; Harvard University; Tufts University
West Roxbury, Massachusetts	Boston University; Harvard University; Tufts University
(Residency training also is offered at the mental hygiene clinic, in the VA regional office, 17 Court Street, Boston.)	
Dearborn, Michigan	Wayne University
Fort Custer, Michigan	University of Michigan
Minneapolis, Minnesota	University of Minnesota
St. Cloud, Minnesota	University of Minnesota
Gulfport, Mississippi	Louisiana State University; Tulane University
Excelsior Springs, Missouri	University of Kansas
Jefferson Barracks, Missouri	St. Louis University; Washington University
(Residency training also is offered at the mental hygiene clinic, in the VA regional office, 415 Pine Street, St. Louis, Missouri.)	

Lincoln, Nebraska.....Veterans Administration

Lyons, New Jersey.....New York Medical College

Albuquerque, New Mexico.....University of Colorado

Batavia, New York.....University of Buffalo
University of Rochester
Bath, New York.....University of Rochester
Bronx, New York.....Columbia University, Cornell University, Long Island University, New York Medical College, New York University.
Canadaigua, New York.....University of Rochester
Castle Point, New York.....Columbia University, Cornell University, Long Island University New York University, New York Medical College
Northport, New York.....Long Island Medical Group
Staten Island, New York.....Veterans Administration
Sunmount, New York.....Veterans Administration
(Residency training also is offered at the mental hygiene clinic, in the VA regional office, 252 Seventh Street, New York, N. Y.)

Oteen, North Carolina.....Georgetown University, George Washington University, Howard University, University of Virginia
(Residency training also is offered at the mental hygiene clinic, in the VA regional office, 310 West 4th Street, Winston-Salem, N. C.)

Brecksville, Ohio.....Western Reserve University
Chillicothe, Ohio.....Ohio State University
Cleveland, Ohio.....Western Reserve University
Dayton, Ohio.....University of Cincinnati

Oklahoma City, Oklahoma.....University of Oklahoma

Portland, Oregon.....University of Oregon

Aspinwall, Pennsylvania.....University of Pittsburg
Coatesville, Pennsylvania.....Jefferson Medical College, University of Pennsylvania, Temple University, Woman's Medical College
(Residency training also is offered at the mental hygiene clinic, in the VA regional office, 128 North Broad Street, Philadelphia.)

Columbia, South Carolina.....University of South Carolina

Memphis, Tennessee.....Veterans Administration
Nashville, Tennessee.....Vanderbilt University

Dallas, Texas.....Southwestern Medical College
Legion, Texas.....Veterans Administration
McKinney, Texas.....Southwestern Medical College
Temple, Texas.....Veterans Administration
Waco, Texas.....Southwestern Medical College
(Residency training also is offered at the mental hygiene clinic, in the VA regional office, Love Field, Dallas, Texas.)

Salt Lake City, Utah.....University of Utah

White River Junction, Vermont.....Dartmouth Medical School

Richmond, Virginia.....Medical College of Virginia
Roanoke, Virginia.....University of Virginia

American Lake, Washington.....Veterans Administration
Walla Walla, Washington.....Veterans Administration

Tomah, Wisconsin.....University of Wisconsin
Wood, Wisconsin.....Marquette University

Many of these hospitals provide residency training in but one or two of the medical specialties, and are frequently affiliated with other hospitals on the above lists. Training at mental hygiene clinics in Regional Offices is confined to psychiatry and is in each instance an affiliate to a hospital program.

Those interested in residency training or internship should make application to the Dean's committee at the university co-operating with VA in the program, or to the manager of the hospital in the area in which they prefer to serve.

Current Publications of Women in Medicine

Hirsch, H. L., **Vivino, Jean J.,** and Dowling, H. F.: Streptomycin; a review of the basic principles and their clinical application. M. Ann. District Columbia, *17:* 311-325, 368-369, June 1948.

The authors review the history of the discovery, the production, chemical and physical properties of streptomycin; the resistance to absorption, excretion, and distribution and administration of this antibiotic and its clinical use in various infections (urinary tract, central nervous system, respiratory tract, eye, ear, nose, eberthella (typhoid), salmonella, Shigella infections, and in cholera, bacteremia, bacterial endocarditis, brucellosis, venereal diseases and tuberculosis). Its use in surgical conditions is also discussed and the toxic manifestations are described.

Jordan, Sara M.: An evaluation of the peptic ulcer problem. M. Ann. District Columbia *17:* 326-333, June 1948.

(From Department of Gastroenterology, Lahey Clinic, Boston.)

The author emphasizes the following precepts: (1) The disease should be diagnosed as early as possible and the ulcer and patient both treated, the ulcer healed and the patient educated to keep it healed. (2) No ulcer should be considered intractable until proven so by meticulously administered medical management. (3) The intractable patient should not be confused with the intractable ulcer. (4) No short-cut method of treatment involving unphysiologic procedure should be used until all other methods have been tried. (5) The recurrent ulcer, if on the gastric side, must be regarded with suspicion of malignancy and resected.

Robinson, S. J., **Aggeler, Dorothy M.,** and Daniloff, G. T.: Heart disease in San Francisco School Children: 1947 Registry showing incidence, problems, and supervision techniques. J. Pediat. *33:* 49-57, July 1948.

San Francisco has pioneered in the establishment of a central registry of cardiac children in its schools. This provides a method of following these children through the years, keeping them under medical supervision so that they may have hospital and other institutional care when indicated, the circumstances of their lives may be eased when necessary, they may have proper education for their physical limitations and be protected from recurrent infections.

The registry was started in September 1946 and by the end of June 1947 there were 1120 children known to it with heart disease. There were 234 cases of active rheumatic fever among the children 5 to 18 years of age, and 11 cases in children of preschool age, making a total of 245. Of every 1000 school children, 2.43 had rheumatic heart disease, i.e., valvulitis (this does not include the 245 active cases). Almost 2 (1.9) out of every 1000 had some type of congenital heart disease. Eighty-five per cent of the children with cardiac disease were born in San Francisco or somewhere in California and reared there. This problem is thus significant for San Francisco.

Schwartzman, J., Maffia, A., **Crusius, Margaret E.,** and Brunhoffer, A. Congenital toxoplasmosis. J. Pediat. *33:* 66-73, July 1948.

(From Pediatric Service of New York Medical College and Flower-Fifth Avenue Hospitals.)

A case of congenital toxoplasmosis in a 17-month-old female Negro infant is reported, in which microcephalus, chorioretinitis, diffuse cerebral calcification, and mental deficiency were present. Dwarfism was noted for the first time in this condition. The problems of diagnosis and effective therapy are discussed.

Rubin-Rabson, Grace: Psychology in pediatrics. J. Pediat. *33:* 128-135, July 1948.

(Abridgement of a chapter to appear in Applied Psychology to be published, New York, Rinehart & Co.)

This general consideration of the subject includes discussion of the mentally handicapped, behavior disorders, deafness and speech disorders, and the need for pediatric-psychologic co-operation.

Wittman, Phyllis: Diagnostic and prognostic significance of the shut-in personality type as a prodromal factor in schizophrenia. J. Clin. Psychol. *4:* 211-214, April 1948.

(Illinois Department of Public Welfare, Elgin State Hospital.)

Sixty-six schizophrenia subjects who had been studied in childhood at a Child Study Bureau with available data, and 66 cases for whom no record of having been studied psychologically in childhood was available, were compared. The results suggest that Meyer's concept of the "shut-in" personality does differentiate the "process" schizophrenic from the "schizophreniforme" reaction and hence is of both diagnostic and prognostic importance.

Cohen, E. B., **Davis, Helen P.,** and Mowry, W. A.: Thephorin in allergy, a study of 292 cases. Am. J. Med. *5:* 44-47, July 1948.

(From Allergy Service, Department of Medicine, Wisconsin General Hospital, Madison.)

Thephorin, a new antihistaminic drug, chemically unrelated to others now available, was employed in the management of 292 allergic patients. The symptomatic relief observed and the paucity of untoward reactions reported suggest that this drug deserves extensive clinical trial.

Hare, Laura and Wilmore, R.: Acute porphyria; two cases with autopsy reports. Am. J. Med. *5:* 53-58, July 1948.

(From Department of Medicine, Indiana University School of Medicine, Indianapolis.)

Two cases of acute porphyria are described with particular reference to the general course of the disease and the findings demonstrable at autopsy. Both cases were characterized by rather typical exacerbations and remissions of symptoms referable primarily to the nervous system and to the gastrointestinal tract. The familial tendency was demonstrated in the first case. Histological study of tissues revealed the most significant changes in the peripheral nerves in which demyelinization was the outstanding feature. Loss of striations in skeletal muscle accompanied the neurologic abnormalities. The identity and source of the toxic agent, as well as an interpretation of the pathogenesis of this type of disturbed metabolism, is still being sought.

Fraenkel, Marta: Medical attendance during terminal illness. Am. J. Pub. Health *38:* 970-976, July 1948.

Data from death certificates were studied for indications of medical attendance during terminal illness. These certificates constituted approximately 10 per cent of the recorded deaths which occurred in seven states selected as illustrative of all states. Some correlations were found between the size of community and adequacy of medical attendance. Lack of medical attendance was frequent among the very young and the very old in states where "unattended deaths" were relatively numerous, and among Negroes. Nearly 62 per cent of the cancer deaths occurred at home; the proportion of home deaths increased with increasing age. Four-fifths of all cancer deaths were classified as having routine attendance.

Wallace, Helen M., Abramson, H., and Losty, M. A.: Formula rooms for newborn infants in lying-in hospitals. A preliminary study on supervision and certain techniques for preparation. Pediatrics *1:* 758-766, June 1948.

(From New York City Department of Health.)

Formula room procedures of 113 hospitals giving lying-in care were studied during the past year. The findings and a review of the literature indicate that this is a neglected field of investigation and that the entire procedure of formula preparation in hospitals requires revision. It is the responsibility of hospital administrators, pediatricians, obstetricians, nurses, dieticians, and public health workers to devise safe and practical methods for preparing infant formulas and to plan the layout of the formula room. The methods recommended should be based on sound scientific data and should be sufficiently simple to be carried out effectively by any person assigned to formula room duty.

Zuelzer, W. W., Wheeler, W. E., and **Leonard, Martha F.:** The RH factor; practical aspects. Pediatrics *1:* 799-827, June 1948.

(Round Table discussion at Annual Meeting of the Academy, Dallas, Texas, December 8-11, 1947.)

The means of diagnosis and the evidence for certain assumptions regarding the course and prognosis in erythroblastosis on which therapeutic claims are often based, were discussed. Clinical data was presented and illustrative cases were described.

Dingle, Phillis and **Drury, Kathleen A. D.:** A case of extrauterine pregnancy. J. Obst. & Gynaec. Brit. Emp. *55:* 318-321, June 1948.

This case was successfully treated by laparotomy at the 38th week. The condition had been provisionally diagnosed at six months and early radiographs are thus available. Mother and baby survived.

Combes, F. C., **Zuckerman, Ruth,** and Bobroff, A.: Copper undecylenate in the treatment of dermatomycoses. J. Invest. Dermat. *10:* 447-453, June 1947.

(From Department of Dermatology and Syphilology, New York University College of Medicine, and Third (New York University) Medical Division Bellevue Hospital, New York.)

The historical background (in the past two decades) for the treatment of cutaneous fungus infections is reviewed. The results of treatment of tinea capitis, tinea corporis and dermatophytosis with copper undecylenate combined with a "wetting" agent, dissolved in a fat-solvent base are presented. The therapeutic responses for the most part were favorable and warrant serious consideration and further trial of the remedies.

Pascher, Frances and Sawicky, H. H., **Silverberg, Mabel G.** and Emmet, R.: Therapeutic assays of the New York Skin and Cancer Unit, New York Post Graduate Medical School and Hospital. Assay I—Bistrimate for Lupus erythematosus, lichen planus, and other dermatoses. J. Invest. Dermat. *10:* 441-445, June 1948.

This assay indicated that bistrimate is a valuable therapeutic agent in the treatment of the discoid type of lupus erythematosus. The results in this disease were rated as good to excellent in 50 per cent of the cases, moderate or fair in 25 per cent, and poor in 25 per cent. It was more difficult to evaluate the efficacy in the exanthematic type of lichen planus, particularly because of the variable course of the disease. The results were also equivocal in the hypertrophic form of lichen planus. The results in the limited number of scleroderma and granuloma annulare cases allowed no conclusions. Further investigations are necessary. In general the drug was well tolerated and recovery from the mild toxic effects was complete within a few days to two weeks in all cases of untoward reactions.

Goldsmith, Grace A.: The treatment of protein deficiency syndromes. Bull. Tulane M. Fac. *7:* 57-62, May 1948.

The factors leading to protein deficiency, the various compensatory diets and the preparations for parenteral administration are described. The complications of the protein deficiency syndromes (cardiac failure, etc.) are discussed with respect to therapeutic management.

Hagens, E. W., **Karp, Mary,** and Farmer, C. J.: Penicillin and streptomycin aerosol in the treatment of pulmonary disease. Arch. Otolaryng. *47:* 138-148, Feb. 1948.

(From Department of Otolaryngology, Wesley Memorial Hospital, and Northwestern University Medical School; Department of Anesthesia Wesley Memorial Hospital, and Department of Surgery, Northwestern University Medical School; Department of Biochemistry, Northwestern Medical School.)

Ten patients with chronic pulmonary conditions were given penicillin and streptomycin aerosol therapy, and 111 patients of a general hospital, with a variety of diagnoses, were given penicillin aerosol inhalations alone, for a varying period. The combination therapy was of aid in most cases of bronchiectasis and chronic bronchitis, and of less help in cases of asthma with a possible bacterial factor. Streptomycin proved more satisfactory than other drugs against gram-negative bacteria. There were relatively few reactions or complications (about 5 per cent).

The techniques, selections of cases, use of aerosol therapy in surgical intervention, length of treatment and other pertinent factors are discussed.

Appleby, Ruth and Pischel, D. K.: Review of 100 cases of retinal detachment. Am. J. Ophth. *31:* 796-804, July 1948.

(From Division of Ophthalmology, Stanford University School of Medicine, San Francisco.)

This paper is an analysis of 100 consecutive cases of idiopathic retinal detachment operated on with the electrodiathermy technique and subsequently followed.

Sloan, Louise L.: A note on plastic tests objects for perimetry. Am. J. Ophth. *31:* 861-862, July 1948.

(From Wilmer Ophthalmological Institute of Johns Hopkins University and Hospital.)

The advantages of white, red and blue test objects cut from plastic material, which have been used for the past nine years, are discussed. The practical

advantages and disadvantages of white and colored test objects in providing diagnostic information are also discussed.

Friedlander, Kate: The significance of the home for the child's emotional development during the first six years. J. Ment. Sc. *94:* 305-313, April 1948.

The author has attempted to show by examples of three aspects of early emotional development, the transformation of instinctive drives, the first object relationships, and the formation of the super-ego, that family life is the place where this development can proceed most satisfactorily. Attention is called to the amount of work necessary in all cases where children do live within their families.

McIlroy, Louise A.: The obstetrician and gynaecologist as a witness in the courts. Med.-leg. J. *16:* pt. 2, 58-66, 1948.

The legal aspects of nullity cases, and of the diagnosis and duration of pregnancy are described and discussed with illustrative cases.

Lisa, J. R. and **Taylor, Helen M.:** Congenital malformation of the esophagus without tracheo-esophageal fistula. New York State J. Med. *48:* 1622-1624, July 14, 1948.

Case report with review of pertinent literature.

Unger, L., Levy, H. A., Unger, A. H., and **Eisela, Isabelle B.:** Diagnosis and treatment of bronchial asthma. Postgrad. Med. *4:* 62-69, July 1948.

(Northwestern University Medical School and Wesley Memorial Hospital, Chicago.)

Scientific exhibit illustrating diagnosis and treatment of bronchial asthma.

Sebire, Irene: The psychiatrist and society. M. J. Australia *1:* 791-793, June 26, 1948.

(Retiring President's address delivered at annual meeting of Section of Neurology, Psychiatry and Neurosurgery of New South Wales Branch of British Medical Association, December 1947.)

Psychiatry is no longer that specialty of medicine which deals solely with mental disorders. Its horizon has extended far beyond the limitation and circumscribed area of what is generally termed a specialty. As a study of disordered conduct it has become intimate with ethics, cultural anthropology, and sociology, metaphysics and religion. Therefore the concept of psychiatric practice must be broadened and elaborated if the profession is to establish a tradition of community service and fulfill its obligation to society.

Clarke, Delphine H. and Fox, J. P.: The phenomenon of in vitro hemolysis produced by the Rickettsiae of typhus fever, with a note on the mechanism of Rickettsial toxicity in mice. J. Exper. Med. *88:* 25-41, July 1948.

(From Laboratories of International Health Division of Rockefeller Foundation, New York.)

This report describes the hemolytic property of typhus Rickettsiae, with observations on the mechanism of hemolysis and the utilization of this property in the development of a new serologic technique. In vivo experiments to determine the possible relation of the hemolytic property of Rickettsiae to their toxic activity in mice are described.

Henle, Gertrude, Harris, S., and Henle, W.: The reactivity of various human sera with mumps complement fixation antigens. J. Exper. Med. *88:* 133-147, July 1948.

(From Children's Hospital of Philadelphia, Department of Pediatrics, School of Medicine, University of Pennsylvania, Philadelphia.)

This paper summarizes the results of an extensive analysis of the serological reactivity of human sera taken at various stages of infection. The results show that antibodies against S antigen appear earlier, as a rule, than those against V, and that anti-V remains measurable usually for a longer period than anti-S. Both antigens have their place in the early diagnosis af mumps, but the use of V antigen alone appears to be sufficient for the determination of susceptibility.

Drillien, Cecil Mary: Studies in prematurity. Part 4. Development and progress of the prematurely born child in the pre-school period. Arch. Dis. Childhood *23:* 69-83, June 1948.

(From Department of Child Life and Health, University of Edinburgh.)

This paper based on a series of studies of premature and mature infants born between 1943 and 1945 inclusive, is divided into two parts. Part one is a comparison of the medical history of surviving premature and mature infants before discharge from the hospital giving progress in hospital with respect to infection and other pathological conditions. Part two is a study of a sample of 277 children between the ages of 1½ and 4½ years returned for re-examination (103 prematurely born and 174 full-term children). Their progress is considered with respect to feeding during first year, administration of vitamin supplements, diphtheria immunization, milestones in development (sitting, walking, talking, etc.), morbidity rates, behavior disorders and physical examination. The work of other observers is discussed.

Frazer, Muriel J. L.: A study of neonatal infections in the nurseries of a maternity hospital. Arch. Dis. Childhood *23:* 107-113, June 1948.

(From Jubilee Maternity Hospital, Belfast.)

This study covers a period of fourteen months during which all infections, however trivial, were recorded and investigated with a view to determining their nature and the factors influencing their spread. The results are tabulated and a description is given of the precautions taken against cross-infection. The general cross-infection rate over the fourteen-month period was 2.77 per cent. Staphylococcus aureus was responsible for 53 out of 63 infections occurring among 2274 infants. The small separate nursery would seem to be most satisfactory for preventing infection but in the last resort, results depend on the maintenance of an efficient barrier-nursing technique which should operate in all nurseries at all times.

Morgan, Lucille: Radial nerve paralysis in the newborn. Arch. Dis. Childhood *23:* 137-139, June 1948.

(From Mothers' Hospital, Clapton, London.)

Two cases of radial nerve paralysis in the newborn are described, one due to pressure from a uterine contraction ring, the other to involvement of the radial nerve at the site of a fracture. A case of wrist drop due to intrauterine pressure on the palmar flexed hand is described for comparison with the first two.

Chapa, Esther: Readjustment of female delinquents to society. M. Woman's J. *55:* 19-20, July 1948.

According to statistics the tendency to delinquency is due frequently to misery and ignorance and there is less tendency to recurrence. Readjustment is therefore easier. Proposals are submitted for consideration and dealing with the problem in all Pan-American countries.

Ramirez Enriquez, Flora: Aracnoidism. M. Woman's J. *55:* 21, 24, July 1948.

In Mexico, great success has been attained with calcium and magnesium chloride in all cases treated.

Zenil, Sara: The woman doctor is a social necessity. M. Woman's J. *55:* 22-24, July 1948.

Urges accommodations for women at all universities, places of responsibility for women and exchange of women doctors in the Pan American Alliance. Also urges that there be an International Confederation with women doctors of Europe.

Randall, Harriet B.: Sex education in tomorrow's schools. M. Woman's J. *55:* 25-29, July 1948.

General discussion of the responsibility for proper sex education in the schools.

Solovey, Galina: Some of our observations on the different forms of onset in suppurating acute meningitis in infancy. M. Woman's J. *55:* 35-43, July 1948.

Article appeared in Spanish in April, May and June issues of this journal.

Fuster, B., **Gibbs, Erna L.,** and Gibbs, F. A.: Pentothal sleep as an aid to the diagnosis and localization of seizure discharges of the psychomotor type. Dis. Nerv. Syst. *9:* 199-202, July 1948.

(From University of Illinois, College of Medicine, Department of Psychiatry, and Illinois Neuropsychiatric Institute, Chicago.)

Forty patients with pyschomotor epilepsy were studied with the described technique for producing sleep with sodium pentothal in order to obtain evidence of seizure discharges. All showed under pentothal sleep the characteristic anterior-temporal focus of spikes. The technique was used routinely on patients with a history of clinical psychomotor epilepsy. It is simple, taking only 5 to 6 minutes more than the ordinary waking electroencephalographic study. Sodium pentothal is recommended for use at operation where it serves a dual purpose as anesthetic and a precipitant of seizure discharge without danger of motor manifestations. For studies on children or when over one hour of sleep is required, paraldehyde by mouth or a long-acting barbiturate is recommended.

Hunter, Harriot: The treatment of epilepsy. Dis. Nerv. Syst. *9:* 203-209, July 1948.

A practical and workable program for treatment of idiopathic epilepsy is outlined with a detailed consideration of the use of medication. Emphasis is placed on the psychosomatic nature of the problem and the fact that each case should be considered separately. Mesantoin, a new drug, is considered a useful tool in the management of convulsive seizures. Six cases are briefly reported.

Friedlander, Kate: Early signs of antisocial behavior in children. M. Press *220:* 56-58, July 21, 1948.

(From Institute for Scientific Treatment of Delinquency, and West Sussex Child Guidance Service.)

In a significant number of cases of antisocial children there were either gross disturbances in the home background or the personalities of the parents were such that the process of early education could not proceed satisfactorily. Although constitutional factors certainly play a role, it is rare that in any given case the environment was undisturbed during the first five years of life. The re-education should vary according to the age of the offender and the individual circumstances of the case.

Dieckmann, W. J., Bjork, F. J., and **Aragon, Gloria T.:** Cesarean hysterectomy at the Chicago Lying-in Hospital. J. A. M. A. *137:* 1017-1023, July 17, 1948.

(From Department of Obstetrics and Gynecology, University of Chicago, and Chicago Lying-in Hospital.)

On the basis of data from the literature and their own experiences, authors discuss the indications for cesarean hysterectomy, major complications and expected mortalities under various conditions. They describe their method and also the amount of training given to residents in the technique.

Macy, Dorothy, Jr., and Horton, B. T.: Treatment of migraine with histamine. Review of 144 cases. J. A. M. A. *137:* 1110-1114, July 24, 1948.

The records of these migrainous patients treated with histamine alone at the Mayo Clinic between 1937 and 1945 are reviewed and the results of therapy are considered. Although histamine was not found to be either a specific or truly curative agent in the migraine syndrome, until such an agent appears, histamine will continue to have a place among prophylactic measures of value in the clinical management of the migraine patient.

McIntosh, Harriet C.: Roentgen therapy in shoulder pain. A report of 50 cases. J. Am. M. Woman's A. *3:* 277-279, July 1948.

(From New York Infirmary and Woman's Hospital.)

In 38 cases there was relief of symptoms of pain and limitation of motion, in 7 partial relief, and in 5 no relief. There were 6 recurrences within a year, 5 being re-treated with improvement. The rationale of treatment is discussed, giving dosage and methods of application. The importance of keeping the dosage within the recognized limits of skin safety is pointed out. While not a cure-all nor substitute for surgery in all types of cases, the method is considered useful.

Bowles, Doris Emerson: Plastic surgery. J. Am. M. Women's A. *3:* 280-288, July 1948.

(From Alameda Hospital, Alameda County Hospital, Children's Hospital, and Merritt Hospital, Oakland, California.)

The recent advances with respect to cleft palate, cleft lip, birth marks (benign neoplasms), burns, skin grafting (terminology simplified), are described and illustrated.

Lehman, J. A., **Maiden, Sara H.:** Hashimoto's struma. Tr. Am. Soc. Study Goiter, 21-27, 1947.

(From Woman's Medical College, Philadelphia.)

Twenty-three cases, studied and operated on by the authors during the past fifteen years with respect to certain clinic pathologic and physiologic aspects of the condition, are analyzed.

Allan, F. N., Lahey, F. H., and **Murphy, Rosemary:** Hyperthyroidism and diabetes. An evaluation of antithyroid drugs. Tr. Am. Soc. Study Goiter: 248-253, 1947.

(From Department of Internal Medicine, and Department of Surgery, Lahey Clinic.)

A study was made of the association of hyperthyroidism and diabetes in 161 patients seen at the Lahey Clinic in the past twelve years. In 30 patients the hyperthyroidism was treated with thiouracil or propylthiouracil in preparation for surgery; the remainder were treated with Lugol's solution. Before the introduction of thiouracil and propylthiouracil preoperatively, it was possible to perform a one-stage operation in all but one case. There was no mortality.

Diabetes complicated by hyperthyroidism often has been found severe, changeable and difficult to control, and with increased risk from diabetic coma. These changes in the behavior of diabetes are not uniform. In this study an increase was found in the proportion of cases of severe diabetes but also an increase in the proportion of cases of the very mildest degree.

Thompson, W. O., **Thompson, Phebe K.**, and Mandernach, D. M.: Further observations on thiouracil and related substances in the treatment of toxic goiter. Tr. Am. Soc. Study Goiter: 179-186, 1947. West J. Surg. *56:* 270-277, May 1948. (See May-June, 1948 Annotations.)

Rawson, R. W., **McArthur, Janet W.** et al.: The functional activity of thyroid tumors, benign and malignant, as gauged by their collection of radioactive iodine. Tr. Am. Soc. Study Goiter: 187-200, 1947. West. J. Surg. *56:* 82-95, Feb. 1948. (See Jan.-Feb., 1948 Annotations.)

Innes, Elizabeth M.: The blood and bone marrow in the sprue syndrome. Edinburgh M. J. *55:* 282-292, May 1948.

(From Department of Medicine, University of Edinburgh.)

The literature on the blood picture in tropical and non-tropical sprue and coeliac disease is briefly reviewed. The peripheral blood findings in a series of 63 cases of the sprue syndrome are reported in detail (17 cases of tropical sprue, 27 cases of non-tropical sprue, and 19 cases of coeliac disease). The characteristic picture in the adult cases was macrocytosis of the erythrocytes, with or without anaemia, both being more marked in the non-tropical group. The tendency for macrocytosis to persist in spite of liver therapy is noted. The coeliac cases showed a widespread incidence of anaemia of the hypochromic microcytic variety, which was extremely resistant to iron therapy. The marrow picture, described for 18 adult cases, was megaloblastic in 9 cases (2 previously had liver therapy), normoblastic in 5 cases and "intermediate" in 4 cases (characterised by the presence of considerable numbers of intermediate erythroblasts, i.e. smaller cells than megaloblasts but still large and with their nuclear chromatin slightly condensed as compared with megaloblasts). It was normoblastic in both cases of coeliac disease in which it was examined. The significance of the findings is discussed.

Page, S. G., Jr., and **Page, M. Jane:** Sulfadiazine in the treatment of meningococcic meningitis: a study of sixty cases without a death. Virginia M. Monthly *75:* 397-402, Aug. 1948.

Forty-eight of these cases were proven to be meningococcic by laboratory methods while 12 were considered to be "clinical" cases. Alkalinization of the urine prevents renal complications. Meningococcemia should be suspected in a patient with arthralgia and fever. Sulfadiazine is considered the drug of choice in uncomplicated cases.

Foote, F. W., and **Li, Katherine:** Smear diagnosis of in situ carcinoma of the cervix. Am. J. Obst. & Gynec. *56:* 335-339, Aug. 1948.

(From Division of Laboratories and Research, New York State Department of Health, and Pathology Laboratories, Memorial Hospital.)

Of 18 patients with intraepithelial epidermoid carcinoma, 12 were entirely free of gynecologic symptoms. Of the 6 with symptoms, one showed slightly excessive yellowish vaginal discharge and 5 vaginal bleeding which in no case was excessive or continuous. In 14 of the 18 cases smears from the cervix gave unequivocal cytologic evidence of the presence of carcinoma. In 9 cases smears of vaginal secretion were positive, and in the other 9 the vault smears were negative. These results suggest that it is desirable to examine smears from both sources, particularly in asymptomatic cases. Authors discuss the question of whether or not smear methods could be profitably applied in screening the female population at large in a public health detection center.

Ingraham, N. R., Jr., **Rose, Elizabeth Kirk**, Stokes, J. H., Beerman, H., Wammock, Virgene S., Handler, S. H., and Carrozzino, O. M.: Retreatment of the pregnant woman for syphilis following penicillin. Is additional therapy necessary when effective treatment has been given prior to conception? Am. J. Obst. & Gynec. *56:* 340-346, Aug. 1948.

(From Institute for the Study of Venereal Disease, Department of Dermatology and Syphilology, and Department of Pediatrics, University of Pennsylvania; Department of Medicine, Division Dermato-Syphilology, Philadelphia General Hospital; and Department of Dermatology and Syphilology, Pennsylvania Hospital.)

When 52 women were treated for syphilis with penicillin before but not during pregnancy, 46 apparently normal and non-syphilitic living infants resulted. The 3 abortions, 1 miscarriage, 1 stillbirth, and one neonatal death could not be attributed to syphilis and probably resulted from other causes. From this limited series of cases retreatment seems unnecessary, provided the expectant mother's response to previous penicillin therapy has been normal and reinfection has not occurred. Criteria are given for selection of cases in which retreatment may be unnecessary. The great effectiveness and relative safety of penicillin to prevent congenital syphilis make retreatment desirable in cases of doubt.

Metheney, Eleanor: The balanced posture. Am. J. Occup. Therap. *2:* 133-144, June 1948.

(From University of Southern California.)

The mechanics of the balanced posture are discussed and the ideas on modern posture exercise are summarized. Since posture exercise goes on through every minute of life it should be controlled to produce the best results in strength, relaxation, flexibility and efficiency. Any normal person can achieve these results if the desire is strong enough to cause him to apply the principles learned to every activity of daily living over a sufficient period of time to make their practice habitual. A slogan to remember is FPT-MFP (Feet under pelvis, pelvis under trunk—means fine posture). Exercises for improving posture, and various postures illustrating the displacement of the center of gravity of the body and its parts are described. The principles of efficient body mechanics of the body in motion are also outlined.

Mason, Marie K.: Visual communication for the hearing handicapped. Am. J. Occup. Therap. *2:* 158-161, June 1948.

(From Speech and Hearing Clinic, Ohio State University, Columbus.)

The more significant educational characteristics of the Visual Hearing Method include its objectivity, practicability, educational value, and psychological soundness. The Visual Hearing Film Series and Tests are described. The adult patient therapy program and programs for the congenitally deaf child and for the hypacusic child are outlined.

Strauss, Lotte: The pathology of gargoylism. Report of a case and review of the literature, Am. J. Path. *24:* 855-887, July 1948.

(From Laboratories of Mount Sinai Hospital, Division of Pathology, New York.)

The gross and microscopic findings in this case of gargoylism in a 3-year-old girl were compared with findings in the literature. The previously described lesions of the central nervous system, eyes, skeleton and visceral tissues of the viscera, cardiovascular system, and skeleton, not hitherto observed, were reported. These are characterized by the presence of large vacuolated cells, probably fibroblasts for the most part, in association with a proliferation of collagenous fibers and sometimes with an increase of ground substance. These changes have a role in producing some of the characteristic clinical manifestations is discussed in relation to known diseases of lipid metabolism (amaurotic idiocy, Niemann-Pick's disease, Gaucher's disease).

Zeek, Pearl M., Smith, C. C., and Weeter, J. C.: Studies on periateritis nodosa. III. The differentiation between the vascular lesions of periarteritis nodosa and of hypersensitivity. Am. J. Path. *24:* 889-917, July 1948.

(From Department of Pathology, Cincinnati General Hospital, Cincinnati.)

The various stages in the development of experimentally produced lesions of periarteritis nodosa in rats were observed, from the time of their initiation until 52 weeks later. Similar lesions were found in each of 15 cases in man. Seven other cases in man, associated clinically with hypersensitivity, presented vascular lesions of a different type and distribution, which were designated hypersensitivity angiitis. Periarteritis nodosa can be differentiated from hypersensitivity angiitis by the morphologic characteristics of early pre-exudative lesions, the distribution of the lesions in relation to the bifurcation of vessels, the size and type of vessels primarily affected, and by the presence or absence of lesions in the splenic follicular arterioles and in the arteries of the pulmonary circulation.

Macklin, Madge Thurlow: Pitfalls in dealing with cancer statistics, especially as related to cancer of the lungs. Dis. Chest *14:* 525-553, July-Aug. 1948.

(From Department of Zoology-Entomology, Ohio State University, Columbus.)

The importance of evaluating all factors in studying statistics is stressed and the errors that may arise from isolating single factors are pointed out. The importance of control groups being equal as far as possible in all respects to the group studied is also emphasized.

Goettsch, Elvira, Cobley, G., and **Mulloy, Mary:** Treatment of infantile diarrhea with streptomycin and an oral amigen mixture. Pediatrics *2:* 1-20, July 1948.

(From Department of Pediatrics, University of Southern California School of Medicine and Children's Hospital, Los Angeles.)

In a severe epidemic of infantile diarrhea in 1945 and subsequently, bacteriologic cultures of the nasopharynx and the catheterized urine showed a predominance of gram-negative organisms of the colon group. The response of seriously ill infants with parenteral diarrhea to streptomycin was dramatic. Streptomycin was used both orally and intramuscularly in the later stages of the disease. The use of streptomycin and the oral amigen mixture, described here, as an adjunct to the customary routine employed in previous years, effectively shortened the hospital stay, decreased the amount of intravenous therapy, and reduced the mortality. During the eight month period of observation no deaths were encountered which could be attributed to diarrhea.

Hewitt, Edith S. and Aldrich, C. A.: Outline for well baby clinics. II. Recording development of the second twelve months. Pediatrics *2:* 69-73, July 1948.

(From Rochester Child Health Institute, and from Section on Pediatrics, Mayo Clinic, Rochester, Minn.)

The information to be obtained on 5 different cards for infants from 14 to 24 months, is outlined. The purpose of securing this information in order to synchronize care with infant growth is emphasized. The cards are offered as an outline or guide but not as a rigid one and variables of normal growth must be taken into consideration.

Gerard, Margaret W.: V. Treatment of the young child. Am. J. Orthopsychiat. *18:* 414-421, July 1948.

In theory, the treatment of the young child has the same purpose as that of the older child or adult: that is, to correct the patterns resulting from previous traumatic experiences and from parental mishandling by the release of energy from repression, and by initiation of good adaptive methods of energy expression. Specific technical devices used to accomplish this in the small child vary from those for the older children only in point of emphasis rather than in kind. The various techniques for dealing with various problems are described (study of mother, other children, and therapist with the child and dealing with other members of the family, Anna Freud's modified technique, group therapy, and foster home projects).

Cameron, Eugenia S.: Child guidance in semi-rural and neglected areas. A public health project in Wisconsin. Am. J. Orthopsychiat. *18:* 536-540, July 1948.

(From Bureau of Maternal and Child Health, Madison.)

The development and administration of the Wisconsin State Mental Health Program are described. Its variations from other state plans and its problems are discussed. The objectives of the program are to keep problems from becoming serious, "relative prevention," and to give "anticipatory guidance" on the basis of past experience.

Sloman, Sophie Schroeder: Emotional problems in "planned for" children. Am. J. Orthopsychiat. *18:* 523-528, July 1948.

(From Institute for Juvenile Research, Chicago.)

Five hundred consecutive cases presenting emotional problems were studied to determine what proportion of these children were "planned." It was found that 62 children had been definitely planned. These problem children fell roughly into three categories. (1) More than half were children of compulsive perfectionist mothers who would tolerate nothing but perfect behavior from the children whom they so carefully planned and from whom they expected certain gratifications. (2) About one-third were children who were planned in order to save a marriage which was failing. They failed to fulfill their function and were therefore rejected (not one marriage was saved). (3) A third group disappointed their parents by not being of the hoped-for sex and therefore could not be accepted.

Sloman, Sophie Schroeder: Problems of giving child guidance in neglected areas. Am. J. Orthopsychiat. *18:* 541-542, July 1948.

The difficulties between carrying out the program

for Illinois in theory and practice are pointed out. The chief problem is the matter of trained personnel to staff these regions, and to give adequate diagnostic and treatment service.

Furstenberg, A. C. and Crosby, Elizabeth: Neuron arcs of clinical significance in laryngology. Ann. Otol., Rhin. & Laryng. *57:* 298-310, June 1948.

An effort is made here to give due consideration to the peripheral and central pathways over which the impulses of respiration are transmitted. Special emphasis is placed on central tracts in describing certain common respiratory variations. Doubts have been raised by the absence of pathological changes about the brain stem in individuals who died of meningitis and also from experimental work on monkeys, as to the function of the vagus nerves in respiration. The sneezing reflex arc is discussed with respect to the occasional complaint of nasal obstruction after submucous resection of the septum in a patient who has wide open nasal cavities. More work is necessary for a thorough understanding of the entire problem.

Fox, M. J. and Minning, Veronica L.: Incidence of otitis media and mastoiditis in scarlet fever. Ann. Otol., Rhin. & Laryng. *57:* 489-499, June 1948.

(From Department of Internal Medicine, Marquette University School of Medicine, and South View Hospital, Milwaukee Health Department.)

Out of a series of 18,659 cases of scarlet fever seen over a 23 year period, otitis media developed in 9.38 per cent and mastoiditis in .76 per cent. During an epidemic of scarlet fever covering the 2 year period, 1934-35, 23.58 per cent of all cases occurred. Small peaks of increased incidence occurred every 4 to 6 years (1923, 1928, 1934-1935, 1939 and 1943). The incidence of otitis media in scarlet fever has not decreased appreciably during the present decade (8.86 per cent of patients developing it during 1940-1945 inclusive). The incidence of mastoiditis complicating scarlet fever has decreased during the past decade, there being no cases during 1941, 1944 and 1945. This decrease is attributed to the use of chemotherapy which 30.66 per cent of patients received from 1940-1945. The greatest incidence of scarlet fever was in the age group, 5-9 years (42.55 per cent of cases). Over 80 per cent of patients were under 15 years. The incidence of otitis media was greatest in the group under 5 years (17.42 per cent). A slight increase of incidence of mastoiditis occurred in the 10-14 year age group (10.8 per cent also developing mastoiditis). Only one patient who developed mastoiditis did not have clinical evidence of a preceding otitis media (age group over 50), suggesting that mastoiditis is almost always due to extension of infection from the nasopharynx. A brief review of the anatomy of the auditory tube, tympanic cavity and mastoid cells is presented in order to emphasize how it lends itself to the spread of infection from the nasopharynx.

Kemp, F. H., Wilson, D. C. and Emrys-Roberts, Elinor: Social and nutritional factors in adolescent osteochondritis of the spine. Brit. J. Soc. Med. *2:* 66-70, April 1948.

(From Institute of Social Medicine, Oxford.)

This paper, which compared two groups of boys (one from a public school and one from the poorer quarters of the city of Oxford), summarizes a series of investigations on the distribution and the hitherto obscure etiology of juvenile osteochondritis of the spine (Scheurmann's disease) and of its relation with malnutrition and a possible relation with fluorine.

Kemp, F. H., Wilson, D. C., Fish, Winifrede M. and Stobie, W.: Hereditary mesodermal dystrophy. Brit. J. Soc. Med. 2: 71-73, April 1948.

(From Institute of Social Medicine, Oxford, and the Oxford Eye Hospital.)

This paper deals with a recent clinical and social inquiry among the "H" family with respect to the prognosis of the familial disorder, dystrophy of mesodermal tissue (blue sclerotics, laxity of ligaments and brittle bones and deafness). The kindred and affinals of family "H" number 78 out of a total population of 637 in the parish (1937 census). Family "H" had been studied 24 years previously for this disorder (Stobie).

Clay, Mary G. and Clay, A. C.: Chemotherapy of tuberculosis with sulphetrone. Lancet **2:** 180-182, July 31, 1948.

Sulphetrone was given to 57 patients with tuberculosis. Of these, 44 (42 pulmonary) were treated long enough for the results to be assessed. Improvement was noted in 22 cases, 5 were unchanged, 6 became worse and 11 patients died. Improvement (considerable in 9 patients, moderate in 7, and slight in 6) was not dramatic and at best sulphetrone could be regarded as an adjuvant and not as a specific for tuberculosis. Toxic side-effects (nausea, vomiting, anorexia, headache, depression, drug rash, and visual disturbances) which occurred in 6 of 57 patients, disappeared on withdrawal of the drug. The haemoglobin level was lowered but this could be corrected with iron and yeast. Authors advise use of sulphetrone only if there are facilities for estimating blood-sulphetrone levels and for carrying out blood-counts, and recommend further study in selected cases.

Marshak, Lydia C. and Rodriquez, J.: Granuloma inguinale. Treatment with streptomycin. J.A.M.A. **137:** 1293-1297, Aug. 7, 1948.

(From Chicago Intensive Treatment Center, Venereal Disease Control Program, Chicago Health Department, in cooperation with U. S. Public Health Service.)

The cases of eleven patients treated with streptomycin are reported. All showed an immediate favorable response, with disappearance of Donovan bodies and healing of lesions. A progressive resolution of the lesions was observed long after discontinuation of streptomycin therapy. Four patients, with lesions of from 2 to 28 years' duration, whose disease had been resistant to antimonial therapy, showed prompt response to streptomycin. Three patients presented relapse after a period of 3 weeks to 8 months. No sign of developing resistance to streptomycin was observed in 1 patient retreaded after a relapse. Eight patients, observed for 2 to 15 months, showed no evidence of relapse.

Gutelius, Margaret F.: Modified self-selection method of feeding pre-school children in the home. Am. J. Pub. Health **38:** 1118-1125, Aug. 1948.

A modified method of free choice in eating is possible for pre-school children without undue effort or expense. Experiences with two children in one home are described. These two girls are healthy and happy. They take an adequate diet and are developing conventional eating habits in their own time.

Anderson, R. K., Calvo, J., Robinson, W. D., Serrano, Gloria and Payne, G. C.: Nutrition appraisals in Mexico. Am. J. Pub. Health **38:** 1126-1135, Aug. 1948.

(From International Health Division of Rockefeller Foundation in cooperation with Ministry of Public Health and Welfare of Mexico, and its subdivisions, National Institute of Nutrition, and School of Hygiene.)

Studies of the nutritional status of several population groups on the high plateau of central Mexico

demonstrated that the common dietary pattern is fundamentally sound. This pattern is based on a liberal consumption of tortillas, beans, and chili peppers, supplemented to a greater or less extent with foods obtained locally. However, the caloric intake is low, little animal protein is consumed and insufficient amounts of riboflavin and niacin are obtained from the diet. Thiamine and mineral intakes are in general good. Clinical evidences of nutritional deficiencies were uncommon although there were indications of mild deficiencies, particularly of vitamin B-complex. By U. S. standards, growth is retarded and stature is small in Mexicans but racial and other factors may be contributory. While there is need for improvement in quantity and quality of the average Mexican diet, authors advise caution and taking into account the nutritive value of the food usually consumed. Attempts to impose a food pattern recommended for a U. S. population might tend to lower rather than improve the nutritional status under present conditions.

Stewart, Alice et al.: Pneumoconiosis of coal-miners. A study of the disease after exposure to dust has ceased. Brit. J. Indust. Med. **5**: 120-140, July 1948.

(From Medical Research Council, Pneumoconiosis Unit, and Emergency Public Health Laboratory, Cardiff.)

Nearly 3,500 miners who contracted pneumoconiosis while working in the anthracite and steam coal pits of South Wales were followed up after they had been away from the mines from two to fifteen years with respect to mortality rates during the early and late stages of the disease, open tuberculosis, x-ray and blood findings, and other pertinent facts.

Paterson, Edith and Thompson, M. B.: Time- intensity factors in x-irradiation. Brit. J. Radiol. **21**: 414-419, Aug. 1948.

(From Radiobiological Laboratories, Christie Hospital and Holt Radium Institute, Manchester.)

Experiments on fibroblasts in vitro were carried out to find the influence of dosage-rate on radiation effect. With a constant over-all time the lethal effect of irradiation at a high dosage rate, but highly fractionated, was found to be the same as that of low dosage continuous irradiation. However, the effect of highly fractionated high dosage-rate irradiation was less than that of irradiation given at the same dosage-rate in fewer fractions but with an interval of over 40 hours. Dosage-rate as such is, therefore, of less importance than the dose per fraction or the intervals between fractions, and it may be concluded that, in comparisons between high dosage-rate irradiation given over a short time and that at low dosage-rate continued over a longer period, the operative factor is the over-all time.

Li, Katherine Y. Y.: The plasma skin graft technique with notes on eighteen cases. Chinese M. J. **66**: 151-152, March 1948.

(From Memorial Hospital for Treatment of Cancer and Allied Diseases, New York.)

An exact technique is described by which 2 of the 18 cases were treated. The other sixteen had only heparinized plasma painted on the recipient area and undersurface of the graft as coagulum. The 18 cases are briefly summarized, giving success or failure of the graft in each case. Author suggests the use of citrated plasma for the recipient area and 1% calcium nitrate on the undersurface of the graft, if heparin is not available.

Searles, P. W. and **Lenahan, Rose M.**: Intravenous anesthesia. New York State J. Med. **48**: 1699-1702, Aug. 1, 1948.

(From University of Buffalo, School of Medicine.)

Some of the various common drugs used in intravenous anesthesia are evaluated and some of the salient features embodied in their administration are pointed out. The drugs discussed were pentothal sodium, curare, procaine and combinations of these. The combinations were: Pentothal sodium, nitrous oxide, and oxygen, pentothal sodium, nitrous oxide, and ether, local block and pentothal sodium, curare and nitrous oxide, curare and cyclopropane, ether and curare, nembutal and curare, curare with spinal anesthesia, pentothal sodium, curare and nitrous oxide.

Gottschalk, Hellen Reller and Weiss, R. S.: Studies on sensitivity to plasticizers. Ortho-nitrobiphenyl, n-isopropyl benzene sulfonamide and n-isopropyl benzene sulfonamide and n-isopropyl ortho and para toluene sulfonamide. Arch. Dermat. & Syph. **57**: 304-307, March (pt. 1), 1948.

(From Dermatological Department of Barnard Free Skin and Cancer Hospital, and School of Medicine, Washington University, St. Louis.)

An attempt to produce sensitization was unsuccessful in 200 volunteers tested with each of three plasticizers: ortho-nitrobiphenyl, n-isopropyl benzene sulfonamide and n-isopropyl benzene sulfonamide and n-isopropyl ortho and para toluene sulfonamide (mixture). There was no evidence of pre-existing sensitivity to these plasticizers in the volunteers.

Krug-Brady, Othilda: Emotional security for children. Cincinnati J. Med. **29**: 427-431, Aug. 1948.

(From Department of Psychiatry, University of Cincinnati College of Medicine, and Cincinnati General Hospital.)

The author discusses the securities for children, the significance of the parent-child relationship and emphasizes that the minister and religious teacher share a responsibility with the physician, nurse, school teacher, and psychiatric social worker in contributing significantly in the development and progress of mental hygiene or preventive psychiatry.

Loveland, Grace: The opsonocytophagic test in brucellosis. Nebraska State M. J. *33:* 299-302, Sept. 1948.

The tests reported here were undertaken for the purpose of the laboratory diagnosis of brucellosis and to establish, if possible, the status of individuals toward brucella. A total of 212 tests were done in two groups of individuals: Nebraska Wesleyan students with positive skin tests, and sanatorium cases. The conclusions drawn are: (1) that phagocytosis can be measured by the test but the test is dangerous and technically difficult; (2) that phagocytosis is increased after skin tests and after vaccine or other therapy. (Agglutinations are also increased following skin tests); (3) that the results are not sufficiently consistent to make the opsonocytophagic test useful in survey work; (4) that the procedures in order of importance for the laboratory diagnosis of brucellosis are: First, culture, culture of blood, bone marrow, joints, foci; second, agglutination; and third, skin tests.

Levin, S. J., and **Moss, Selma S.**: Hydryllin in asthma and hay fever. Clinical results. J. Michigan State M. Soc. *47:* 869-871, Aug. 1948.

Hydryllin, a combination of diphenhydramine (benadryl base) and aminophylline was evaluated clinically in 48 cases of asthma and hay fever. The results in both of these conditions were much better than with pyribenzamine or benadryl alone. The side reactions were considerably less in number. The drug has not been tried in a large enough number of cases of urticaria, allergic rhinitis, and atopic eczema for these to be included.

BOOK REVIEWS

(EDITOR'S NOTE:—*These reviews represent the individual opinions of the reviewers and not necessarily those of the members of the Editorial Board of this* JOURNAL.)

CORRELATIVE NEUROANATOMY. By Joseph J. McDonald, M.S., M. Sc. D., M.D., Joseph G. Chusid, A.B., M.D., and Jack Lange, M.S., M.D. 4th edition. 156 pp. 60 illustrations. Price $3.00. University Medical Publishers, P.O.B. 761, Palo Alto, Cal., 1948.

The book, illustrated by suitable diagrams, summarizes important notions from gross anatomy, neuroanatomy, neurophysiology, pharmacology, and clinical neurology. It thus correlates numerous scattered data for the benefit of students in all fields of neurology.

The first section deals with the peripheral nerves, including the autonomic system. The second section brings in the principles of neurodiagnosis from the anatomical as well as the functional viewpoint. The subjects of reflexes, pneumoencephalography, electroencephalography, electrical examination, and cerebrospinal fluid are discussed in brief outlines. The third section contains a summary of diseases and disorders of the central nervous system. An appendix presents a discussion of muscular dystrophies and atrophies, and gives a list of neurological signs and syndromes. The value of this correlative neuroanatomy as an auxiliary text and handy guide is attested by the rapid sequence of new editions and printings.

—Hartwig Kuhlenbeck, M. D.

MODERN CLINICAL PSYCHIATRY. By Arthur P. Noyes, M.D., Superintendent, Norristown State Hospital, Norristown, Pennsylvania. 3rd edition. 525 pp. Price $6.00. W. B. Saunders Co., Philadelphia, 1948.

In the new edition of his classic textbook of general psychiatry Dr. Noyes has done a masterful job of rewriting what is at once a practical guide book for the teaching of clinical psychiatry and a systematic reference book for the clinician.

The material is presented in a manner closely following the official American Psychiatric Association classification of mental illness and there are no gaps. At the same time, the chapters on Schizophrenia and Psychoneuroses are expanded to give some explanations of the tremendous research with these reactions.

A chapter on Psychiatry and General Medicine outlines generally what has been the re-awakening in the last decade of psychiatric interest in the patient with organic illness. In addition the various approaches to psychotherapy and physical therapies are defined briefly and clearly in special chapters. Child problems are discussed as a separate entity.

Certainly this new edition is an up-to-date and complete text, conservatively presenting the facts of our present knowledge, and with considerable insight marking some of the sign posts of speculation that seem most hopeful for the future.

—B. E. McLaughlin, M.D.

THE REHABILITATION OF THE PATIENT, SOCIAL CASEWORK IN MEDICINE. By Caroline H. Elledge, Assistant Professor of Social Work, McGill University, Montreal. Price $2.50. J. B. Lippincott Company, Philadelphia, London, and Montreal, 1948.

The role of the medical social worker in a program of rehabilitation is pointed up in this most readable collection of case histories by Caroline Elledge who has been associated with the Division of Physically Handicapped Children of the New York City Department of Health, and also with the National Council on Rehabilitation. In her preface, Miss Elledge acknowledges the co-operation of a sub-committee of the American Association of Medical Social Workers employed in various parts of the United States.

Selection of case histories which make up a large portion of the book has been careful, and on the whole calculated to present both successes and an occasional inevitable failure of the social worker's methods. Case histories are the most readable kind of presentation of material concerning rehabilitation work, and because the concept is still new they are the most graphic. Actual graphs and numerical records will never tell a more convincing story than bits of real life histories. However, writers in this field risk being carried away by the fiction of their daily work and the limitations of confining themselves to a few cases outstanding in their memories.

The author's discussion of teamwork among doctors, nurses, social and all other workers touching the patient is explanatory, illustrative, and sensibly stresses the patient's own place among those planning his future. Miss Elledge's insistence on preserving the individuality of the patient and thus, perhaps, taking longer than seems necessary to reach a satisfactory "case closed" is one thing that makes her book a welcome addition to the growing literature on rehabilitation.

The Rehabilitation of the Patient is an excellent inspirational book for those already in the field of medical social work and for persons who have never quite understood the meaning of the word, rehabilitation.

—Marietta Higgins

IDENTIFICATION OF TUMORS. By N. Chandler Foot, M.M., Professor of Surgical Pathology, Cornell University Medical College, Surgical Pathologist, New York Hospital. 241 illustrations. 397 pp. Price $7.00. J. B. Lippincott Company, Philadelphia, 1948.

The author has achieved his aim to give aid to the student in a subject the scope of which is almost boundless. Diagnostic oncology, in the recent past, has become an important issue not only to the pathologist but also to the student of many other fields in medicine, particularly of surgery. To them this volume will render the valuable service of systematic orientation combined with precise, yet exhaustive information.

The great experience of the author derived from his research and teaching activity enable him to weed out all non-essentials and to avoid confusion by overprofoundness. The necessary brevity of the text is successfully supplemented by well selected photomicrographs giving additional aid to the intricate task of tumor diagnosis. The uniform approach applied to all tumor categories in discussing their source, site, appearance, and clinical evaluation adds to the clarity and effectiveness of instruction gleaned from this compendium which is to be welcomed as an appreciable addendum to the teaching armamentarium in oncology.

—Grete Stohr, M.D.

Medical Women in the News

K. FRANCES SCOTT, M.D.

Medical Woman Of The Month

At its Biennial Convention held in Fort Worth, Texas, in July 1948, Dr. K. Frances Scott was elected President of the National Federation of Business and Professional Women's Clubs, Inc. She had previously served as first Vice-President of the Federation.

Dr. Scott, who is of English and Scottish ancestry, was born in Vincennes, Indiana, the daughter of a Presbyterian minister. Her choice of a profession was influenced partly by her uncle, also a physician, and partly by the fact that her family doctor was one of the early medical women of Indiana. In 1912 she graduated from Wooster College in Ohio, as valedictorian of her class; and she then enrolled at Rush Medical College, Chicago, from which she obtained her medical degree.

K. Frances Scott, M.D.

After serving internships at Mary Thompson Hospital for Women and Children and Cook County Hospital, Chicago, Dr. Scott was appointed assistant physician at Smith College, Northampton, Massachusetts. She has also served as assistant physician at Vassar College, Poughkeepsie, New York, and as health consultant at Radcliffe College, Cambridge, Massachusetts, where she has also lectured. She is now associate professor of hygiene at Smith College. Many articles on health and hygiene have come from her pen and she has also prepared a textbook on college hygiene.

Her hobbies include carpentry, painting, and out-of-doors work—on lawn and flower beds. Her home is in Northampton.

Dr. Scott is a member of the American Association of University Professors, the American Public Health Association, and the American Student Health Association. During the war, she served on the local Women's Civilian Defense Committee and on the War Finance Committee.

In accepting the presidency of the National Federation of Business and Professional Women's Clubs, Dr. Scott said: "No longer can we think only in terms of our rights. We must now consider our responsibilities. We must take up willingly and wholeheartedly the responsibilities that go with rights, put away the childish passing of resolutions and the sponsoring of causes without accepting the responsibility for putting them into effect. We must realize, and we must help our elected representatives to realize, that what we say and do and legislate, even in internal affairs, can wreck or build this one world in which we now live."

Dr. Scott's election is a personal tribute and a recognition of the important role which medical women can play in public affairs.

Medical Women in the News

The Berkeley State Mental Hygiene Clinic, associated with the University of California, has recently been opened under the direction of **Dr. Portia Bell Hume.** The clinic is part of the State Department of Mental Hygiene and is financed by funds provided under the National Mental Health Act.

* * *

Dr. Mary Puckey, Medical Superintendent of the Rachel Forster Hospital, Sydney, Australia, and Miss Gillespie, the Treasurer, were visitors to the U. S. A. during August and September. They were devoting the major part of their time to inspection of hospitals, chiefly concerned with the various aspects of hospital administration. The Rachel Forster Hospital has about the same bed capacity as the New York Infirmary and like the Infirmary, is staffed by women physicians, so a visit to this hospital and an interview with Miss M. Marion Smith, the Administrator, proved interesting. The problems of both were very similar—a major one, the nursing situation, just as difficult "down under" as in New York. The next stop of the visitors from Australia was Chicago.

Other visitors to New York in September were **Dr. Carew Hunt** of Brighton, England and **Dr. Mary Esslemont** of Aberdeen, Scotland. Dr. Esslemont was the representative of the Medical Women's Federation (Great Britain) to the British Medical Association in their deliberations regarding the National Health Act. She is also a member of the B. M. A. Committee which is studying the problem of chronic illness and so was an interested visitor at Goldwater Memorial Hospital on Welfare Island.

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Dr. Herdis Gundersen of Oslo, Norway writes that she and her colleagues greatly appreciate receiving the medical journals sent by Dr. Selina Schruyver. She also reports that **Dr. Gudrun Boysen,** also of Oslo, will soon arrive in the U. S. A. Dr. Boysen is a specialist in Internal Medicine and will spend about four months in the U. S. A. visiting hospitals in New York, Boston, Chicago and the Mayo Clinic.

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Barnard College, Columbia University, New York City, announces the appointment of **Dr. Marjorie Nelson** as college physician.

* * *

Dr. Renata Gaddini De Benedetti, Pediatrician of the University of Rome Medical School has received a fellowship in pediatrics—at Harvard University Medical School—and will study with Dr. Stanley Cobb. The fellowship was provided through the joint auspices of the Institute of International Education and the National Council of Jewish Women.

* * *

Four women students are among the eighty-four freshmen enrolled for the current session in the Medical College of Virginia (Richmond).

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Dr. May Baird of Aberdeen, Scotland, has been appointed Chairman of the Regional Hospital Board for the North East of Scotland, the only woman in Britain to receive such an appointment. Dr. Baird is also a member of the local Town Council, has done much to forward the Nursery School movement and is a member of the working party appointed to study the problem of the training of midwives.

* * *

Dr. Hilda Lazarus, Medical Director of the Vellore Christian Medical College, South Vellore, India has arrived in New York City. The college this year is celebrating the thirtieth anniversary of its founding.

* * *

Dr Faith W. Reed of Cleveland, Ohio attended the National Conference on Education of Teachers, held at Bowling Green, Ohio in July and sends the following report of the meeting:

"The aim of the National Conference on Teacher Education was to crystallize the thinking of the profession in respect to the content and character of teacher education.

"The conference sponsored by the National Commission on Teacher Education and Professional Standards met the week before the National Teachers Convention in Cleveland. It was made up largely of four hundred representatives of various national organizations, one from each group. It was housed on the beautiful campus of Bowling Green.

"The delegates had previously been divided according to their professional interests, with discussion groups of 10-12 people. Each group had a chairman, two consultants and a recorder who ultimately reported to the whole group. There were in all twenty-seven groups.

"This was an excellent way in which to get the opinions of each person, for discussions were spontaneous and interesting. Each morning was devoted to these discussion groups and in some cases a part of the afternoon.

"I was a member of Group 11. The subject of this group was "Health Programs and Services in Teacher Education." C. H. Maxwell, M.D., Chief Administrator of school and college health services, U. S. Office of Education, and Edward Humphreys, M.D., Director Bureau of Mental Hygiene, Department of Public Welfare, Columbus, Ohio, were the consultants in this group.

"Many phases of Health Education were discussed, the teacher's relation to these problems, and how the services could be made more effective. One member brought out the fact that after studying in eight universities, she was impressed with the poor teaching qualities of many college teachers. In training fine teachers it was imperative that college and teacher-training institutions have educators of high quality. **Inspiration is caught and not taught** and there is a crying need for this kind of teaching.

"Sex Education in relation to the school child was discussed. Dr. Ray E. Dickerson, a member of the group, contributed many helpful ideas.

"There was an international flavor given the conference by the presence of exchange teachers from Norway, Malta and Greece, as well as from territorial possessions.

"Mr. Ralph MacDonald, of Washington, D. C., was Executive Secretary, whose leadership carried out the many details of the conference in an excellent way. The findings of the conference are to be published in book form and will be available to interested groups."

* * *

NEWS FROM THE WOMAN'S MEDICAL COLLEGE

The Woman's Medical College of Pennsylvania announces a new residency in Anesthesiology, to be filled this year by Dr. Rosalie Marie Reardon, who graduated from the College in 1947.

Dr. Phyllis A. Bott has been appointed professor of physiological chemistry and chairman of the Department at the Woman's Medical College. Dr. Bott, a graduate of the University of Wis-

consin, was for several years associated with Dr. A. N. Richards in the Department of Pharmacology at the University of Pennsylvania. In 1941 she became associate professor at the Woman's Medical College, and in 1946 succeeded Dr. Marion Fay, professor of physiological chemistry, as chairman of the department, when Dr. Fay became dean of the College. A new appointment to this department is that of Dr. Elizabeth M. Knott as assistant professor.

* * *

Under a grant from the National Advisory Cancer Council a Department of Oncology has been established at the Woman's Medical College, with Dr. Isabella H. Perry as director, and Dr. Mildred Pfeiffer as assistant director. Integration of the present clinical work will be emphasized. The Advisory Cancer Committee represents the faculty. Sections of fourth year students will attend the weekly General Tumor Conference where a Tumor Board, representing the various departments and specialties, will confer on the problems presented by the cases referred to the General Tumor Conference. There will also be a Tumor Diagnostic Clinic, a question hour for students, and a monthly cancer research Seminar.

The Division of Cancer Control, Department of Health, Commonwealth of Pennsylvania, has granted three fellowships in Oncology to Dr. Cornelia Motley, Dr. Mary B. Dratman, and Dr. Janet Hampton. Dr. Sophie Brenner is also working in the Department of Oncology under a State grant.

OBITUARIES

Vera L. Norton, M.D.

Dr. Vera L. Norton, a graduate of Northwestern University Women's Medical School in 1899, died at her home in Waverly, Iowa, on August 11, 1948. After her graduation Dr. Norton practiced for some years in Waverly, and then devoted herself to work in tuberculosis, joining the staff of the Hamilton County (Ohio) Tuberculosis Sanatorium, now Dunham Hospital, in 1917. She was associate director of the hospital for some time prior to her retirement in 1941. Her personal library, presented to the hospital on her retirement, has been named the Vera L. Norton Library. She was interested and active in many projects, gave service to the Red Cross during the war, and was a member of the Iowa State Medical Society, American College of Chest Physicians, American Trudeau Society, National Tuberculosis Association, Northwestern University Alumni Association, American Association of University Women, and American Medical Women's Association. Possessed of a kindly and sympathetic understanding of the people among whom she lived and worked, Dr. Norton was characterized by sincerity and genuineness. She practiced medicine with distinction and won the appreciation, love, and honor of the citizens of each community in which she served.

Louise Doddridge Larimore, M.D.

Dr. Louise Doddridge Larimore, a graduate of the Woman's Medical College of Pennsylvania in 1915, died suddenly at her home in Greenwich, Connecticut, on September 20, 1948. Dr. Larrimore, who held the degrees of Bachelor of Arts from Wellesley College and Master of Arts from Columbia University, made pathology her specialty. Her research work was done at the Rockefeller Institute and later as an associate in the Department of Pathology of the College of Physicians and Surgeons, Columbia University. She was the inventor of a portable high power microscope, for which she received an award from the Women's Hospital of Philadelphia. She later became pathologist and director of the laboratory at the Greenwich Hospital, retiring two years ago after twenty years of service. She also served for a time as pathologist at the North Country Community Hospital at Glen Cove, Long Island. Dr. Larimore was a member of the American Medical Association, the New York State Medical Society, and the Greenwich Chapter of the American Red Cross, and was at one time president of the Women's Philatelic Society, of New York, which she had helped to organize.

Louise Hopkins Meeker, M.D.

Dr. Louise Hopkins Meeker, retired assistant professor of pathology at the New York Post-Graduate Medical School and associate attending pathologist at the New York Post-Graduate Hospital, died on September 21, 1948, at Grasslands Hospital, Eastview, New York, aged 77 years. Dr. Meeker was graduated in 1906 from the Boston University School of Medicine and interned at the Massachusetts Homeopathic Hospital. In 1917 she became an instructor at the Post-Graduate, and this association continued until her retirement in December 1946. During that time she carried on extensive research on the pathology of the eye and wrote a number of papers, covering also diseases of the eye, ear, nose, and throat. She was a fellow of the New York Academy of Medicine, and a member of the American Medical Association, the American Board of Pathology, and the New York County Medical Society.

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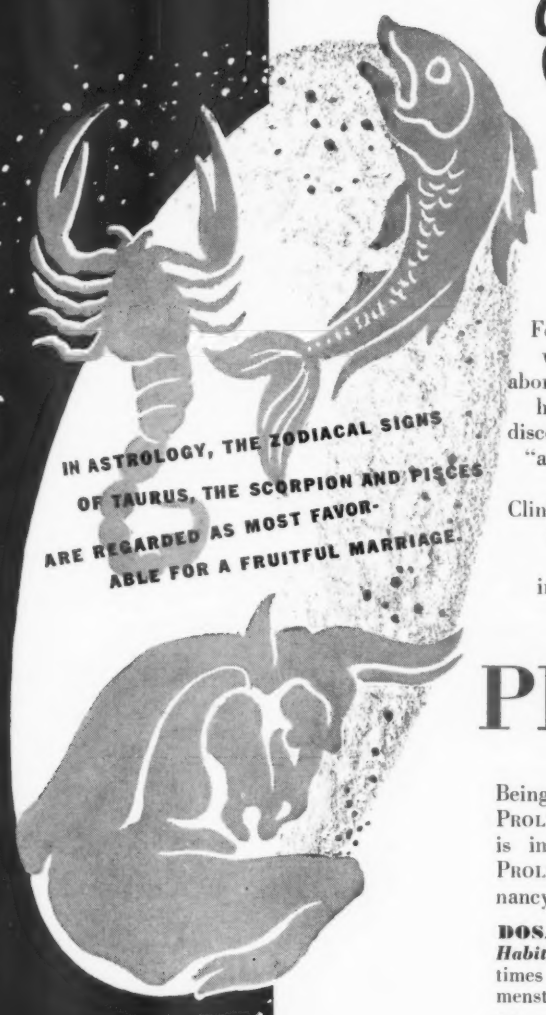

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